

Total Quality Management and Construction Project Management in Libya

By

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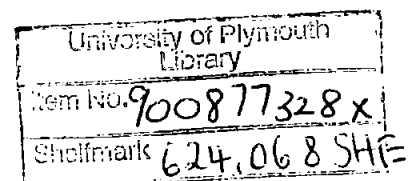
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Abstract

This thesis sought to explore Total quality management (TQM) implementation and barriers that need to be overcome due to differences between societal cultures, which have become a subject of intense discussion in the wake of the globalisation of the world economy. Inter-societal cultural barriers to TQM implementation were contrasted against the accepted organisational cultural barriers, which are well documented in established literature on this topic. A case study for the analysis was taken from the Libyan construction sector, where TQM is increasingly being reported as being adopted by companies keen to solve quality problems in their industry. This research explored the barriers that exist and that have acted to hinder the adoption of TQM practices using an in-depth survey of two Libyan construction companies (A&B). The findings of this research are presented as a conceptual framework upon which proactive measure may be planned to improve TQM adoption and which may also act as a guide for further research. Both qualitative and quantitative techniques were used to obtain primary and secondary data for the research and the TQM model framework was successfully used in a self assessment case study of companies (A&B) in Libya. The survey was able to identify critical barriers that were assessed in relation to other published data on inter-societal and intra-organisational barriers so as to identify a number of barriers unique to the Libyan case study. The overall results indicated that the case study companies were in the early stages of TQM initiatives and that there were large areas for improvement to overcome the barriers.

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At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without the prior consent of the Graduate Committee.

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List of Abbreviations

AFOM	American Federal Office of Management
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
ASQ	American Society for Quality
BBC	British Broadcasting Corporation
CAD	Computer-aided design
CI	Continuous Improvement
EPSRC	Engineering and Physical Sciences Research Council
GPC	General People's Congress
GWC	General Workforce Corporation
HRM	Human resource management
I E C	Internal and External (employees) Customers
ILO	International Labour Organisation
ISO	International Standards Organisation
LAFB	Libyan Arab Foreign Bank
MC	Management commitment
MENA	Middle East and North Africa
MTD	Management training and development
NHS	National Health Service
SPC	Statistic process control
PD C A	Planning, Doing, Checking and Acting Phase
QA	Quality Assurance
QMS	Quality Management System
QTP	Quality through People
TQM	Total Quality Management
TW	Team Work
UN	United Nations
UNDP	United Nations Development Programme

List of Publications arising from this research

Sherif K and Fox A (2009) "Socio-Economic Influences on the Adoption of Total Quality Management in the Libyan Construction Industry" *Fifth International Conference on Construction in the 21st Century, CITC-V*, Istanbul, Turkey, 20-22 May, pp 824-831.

Sherif K and Fox A (2009) "Influences and Barriers Facing the Adoption of Total Quality Management in the Libyan Construction Industry" *5th Nordic Conference on Construction Economics and Organisation*, vol. 2, Reykjavík University, Iceland, 10-12 June, pp 80-88.

Sherif K, Fox A and Bakthavatchaalam V "Influences on International Human Resources Management Strategies; an Indian Case Study, The 2nd International Conference on "Doing Business in India", 17-18 December 2009, at IFIM, Bangalore

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Chapter 1 – Introduction and research problem

Quality in the construction industry is typically understood in terms of “fitness for purpose” (Ho, 1995, p.5) or “quality of workmanship” (Bennett, 1991, p.5). However, this implies a primarily functional interpretation, without elaboration, and is probably an inadequate starting point for a broader investigation of Quality Management Systems (QMS) as proposed by this thesis. One important element of a QMS is Total Quality Management (TQM), which is a structured system for satisfying the needs of internal and external customers as well as suppliers (Kanji 1990). TQM provides a real opportunity to improve organisational effectiveness while also revealing how organisations work and it now permeates all areas of society from business and industry to commerce and education, public life and professional organisations. According to Arnold (1994), TQM is a means of thinking about quality, using all of the functions of the enterprise and integrating them at all levels. To Laszlo (2000, p.8) TQM is that part of the organisation’s management systems that focus on the achievement of outputs in relation to the quality objectives, however Robert (1996) pointed out that:

“Many companies adopting TQM find that the expected benefits are not delivered. Their management do not recognise that there are still barriers to overcome before obtaining the TQM benefits. One of the barriers is an inadequate focus on the latest market environment and on actual customer responses - TQM efforts are devoted to improving performance indicators of internal processes instead of external customer satisfaction. Links and contact between managers and customers are important if companies are to overcome the barriers and obtain the benefits of TQM”.

Reasons cited for the failure of TQM initiative include the lack of appropriate training and inadequate knowledge. The literature review suggests that employees will be motivated to engage in quality-oriented behaviour when its role and relevance to their overall goals are clarified. The hierarchy culture organisations, or the internal process mode organisations that fit in this type of culture, are organisations that emphasise internal maintenance as well as the

need for stability and control and often fall foul of this failure mode (Collins 1998).

Collins (1998) stated that many of the accounts of change and much of the advice which is offered on planning and managing change is based upon limited, mechanistic and overly-rational view of organisations and of social interaction. Therefore, many of the accounts which exist as guides to aid understanding for such systems like TQM, are under-socialized and fail to acknowledge change as a social activity. In modern companies TQM activities often involve people from diverse social groups, who will tend to interpret issues and situations in different ways and often quite divergent ways Hele (2003). For studies into TQM, Hoyle (1994) helpfully pointed out that people at all levels are the essence of an organisation and their full involvement enables their abilities to be used for the organisation's benefits. The need for independence among workers as part of the TQM process is a positive one; it belies a desire to be involved and to take responsibility for their actions, whether in a personal or work situation (ibid). So, for TQM every employee of an organisation becomes an internal customer. This principle means that everyone in the organisation must focus on the customer not only the top management or the sales department (Sun, 2000).

There are a multitude of definitions of culture, each with its own slight variations depending on the focus of study, but most authors suggest that culture is the pattern of arrangements, material or behavioural, which have been adopted by a society (corporation, group, or team) as the accepted way of solving problems (Johns 1960). However, this definition is considered by some to be untenable in international construction projects, where people from diverse cultural background and nationalities work together (Low and Alfelor 2000). The latter point is particularly relevant in Libya, where there is a shortage of skilled manpower and a management class with a traditional view of social responsibility and leadership that contrasts with the premise upon which the philosophy of TQM is based. There is also a generally accepted premise, that to deliver a quality product everyone within an organisation must share a common cultural platform (Ahmed *et.al.* 1999). Maital and Maltz (1980) and Salazar

(1994), both cited by Liang Tan (1997), stated that some barriers affecting TQM implementation relate to resistance by employees to cultures imposed by managers when it affects behaviours, habits and relationships. Smith et.al (1993) give examples of how clusters of cultural barriers can interact with each other to create a very turbulent operational environment.

It has been reported that in Libya there are not enough technical personnel in construction, and too few administrators and planners in government with an understanding of TQM to enable Libyan construction companies to compete, on quality terms, in the world economy (DTI 2002). Libyan organisations need to put more effort into selecting and retaining talented employees and, with particular relevance for the construction industry; they need to improve the regional distribution of experienced workers (Johns 1960). The country's rural areas suffer most from the shortage of skilled manpower, and the reason for this is that the skilled labour force is attracted to the major cities where jobs are available and rewarding. Therefore Libyan organisations have become locked in a battle with two fronts, one in relation to competing in the global market and one in relation to competing for scarce internal resources (Johns 1960). The UNDP (1994) identified some of the cultural practices having adverse effects on Human resource management (HRM) practices in Libyan organisations. They highlighted that in all areas of company practice, managers often fail to provide employees with the proper training, tools, equipment and a good quality work place environment to accomplish the assigned task. In the opinion of the UNDP, these kinds of social issues were given too low a priority by Libyan organisations (UNDP 1994).

According to the Libyan government's public spending plans for 2006 (PROJEX LIBYA) the country is engaged in eleven major development programmes involving the construction industry, they include: a rail network, estimated to be worth US\$9bn, housing construction to meet an anticipated shortage of near half a million homes, 2,000km of road construction, and a number of new airports. These building projects will make a major contribution to quality of life of the citizens of Libya, within the construction sector, that to deliver the quality products expected by clients (and the public) there is a need to address

technical and non-technical/ behavioural issues, as described by Low (1998) and as epitomised by a TQM philosophy. Employee satisfaction is also an important factor in the European Model for Total Quality Management (1994), and the American Baldrige Quality Award (1999) stated that employee satisfaction is as important as customer satisfaction. Satisfaction on the job is also influenced by what has happened to employees off the job-just as work influences a person's satisfaction with life in general, so too does the quality of life away from work influence satisfaction with work.

In Libya, the social and economic changes needed may challenge the traditional influence of both tribe and family, cultural influences that can also cause barriers to training (Elfatthaly 1979). There is a need to planning and devising Libya's economic policies and development programs of the future. It is hoped that the results will encourage everybody in Libyan organisations to seek out opportunities to learn and to develop their skills and knowledge about TQM. If those responsible for implementation of the country's major development projects are not committed to the principles of TQM, then the likelihood of integrating this philosophy significantly into the construction sector will be reduced. According to Eccles *et.al* (1992, p185), practice-focused academic research will encourage the cooperation of business managers. Managers need to understand that they are more than the mere source of academic data. Also according to Cocheu (1995), if senior managers do accept (intellectually) the requirement for new styles of management and behaviour their resistance to educating themselves will be reduced, which is a point acknowledged as one of the main barriers to continuous improvement and to the implementation of TQM . That is, organisational culture impacts on quality from the conception of quality within the organisation". Additionally, Al-Khalifa and Aspinwall (2000) argued that the culture of an organisation can be influenced by education and training, employee's participation programs, improvement communication programs, revision of procedures and policies, reward system modification and behaviour of top management. There are important barriers driving change in the construction management sector such as technology, customer expectations, the economy pressure and organisational pressures (McDermott and O'Dell,

2001). Public sector organisations become successful if they shift from organising around functions to organising around processes, shift to teamwork. In this high competitive world focus on area of economy and society, knowledge has become the most important factor determining the standard of living more than land, tools or labour. It is generally understood that countries that are rich in knowledge assets and intellectual capital fare better in terms of higher levels of growth and development.

According to Mahra (2001) and Morgan and Murgatroyd (1997), any organisation, whatever their size or industry sector, can give themselves a secure future by introducing TQM. For Libya, the implementation of TQM in an effective and efficient manner, especially on public sector projects, the Libyan construction industry must effect some cultural changes. The TQM in an organisation will not work properly when it is designed by a foreigner whose culture is different to the organisation's culture (Glover, 1993), because of the human behaviours and attitudes rather than the machinery or paper system. In similarity, Taylor (1995) says that it is a mistake to adopt a TQM that has worked in other cultures without exploring the differences.

1.1 The research questions

There is a need for special management challenges and problems faced by organisations to the implementation of TQM for construction projects in Libya. It is also required to provide a methodology to develop benchmarks that can be used to establish best practices within the Libyan construction industry.

The researcher will find answers for the following questions:

1. How well understood is the philosophy of TQM in Libyan Construction Companies and what barriers exist to prevent its full application?
2. What is the impact of the wider Libya social culture on the implementation of TQM in the Libyan construction sector and what kind of TQM implementation model should be developed in order to guide libyan construction management when implementing TQM?

1.1.1 Specific aim of the investigation

This research aim to identify and critically evaluate the barriers affecting TQM within construction management practices in Libya.

1.1.2 Objectives

The achievement of the above aims involved the satisfying of the following set of objectives:

- Undertake a critical assessment of the literature on TQM to assess whether or not there is explicit model or range of models, contained within the Literature, which provides a definitive guide to the implementation of TQM.
- To evaluate the main barriers that exist to hinder the adoption of TQM within the construction industry and from them to produce a conceptual framework that may be used to assess TQM practices in the Libyan construction industry.
- Apply the conceptual framework in Libya to test its effectiveness as an assessment tool and to identify barriers unique to the Libyan construction industry that may be actively hindering the adoption of TQM principles.
- Refine the assessment tool and propose practical systems that can be applied in the Libyan construction industry to improve the effectiveness of both the assessment tool and TQM practices.

1.2Thesis organization

This thesis presents research work conducted over seven chapters.

Chapter one (Introduction and research problem) Specific aim of the investigation and objectives and the research questions it also mentions how the research will be organised and the layout of the thesis.

Chapter two (Research Methodology) defines the research in context of a social science problem, justifies the research approach and explain the methods used in detail and research process, with a brief outline of the

research process. In this stage a survey based on the used questionnaire is conducted. The goal of this stage is to complement and validate the data collected from multiple cases studies stage. As illustrated in figure 1 below.

Chapter three (Literature review) presents and discusses what has been written in relation to the subjects areas of interest. It provides a general overview of the TQM philosophy as well as a summary of published literature on the problems encountered when organisation work to adopt of such a philosophy. A review of current literature on quality management practice with particular reference to the construction industry is also presented and the chapter concludes with a personal contribution to the established TQM paradigm by developing a conceptual framework upon which the detailed investigations were subsequently based.

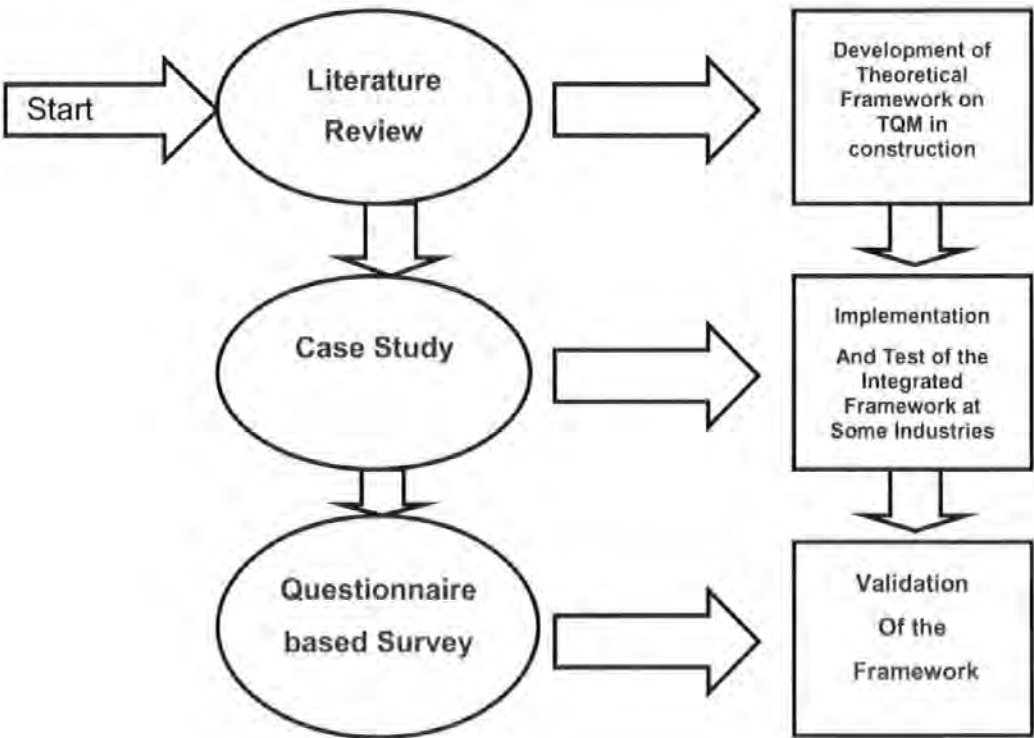


Figure 1 - Stages of Research Methodology

(Source: Author).

Chapter four (Libyan culture and the case study in context), reviews the philosophies that have influenced Libya's social and economic development during the twentieth century and examines these within the context of the Libyan Construction Industry. Examples of case of culture impact in Libya are

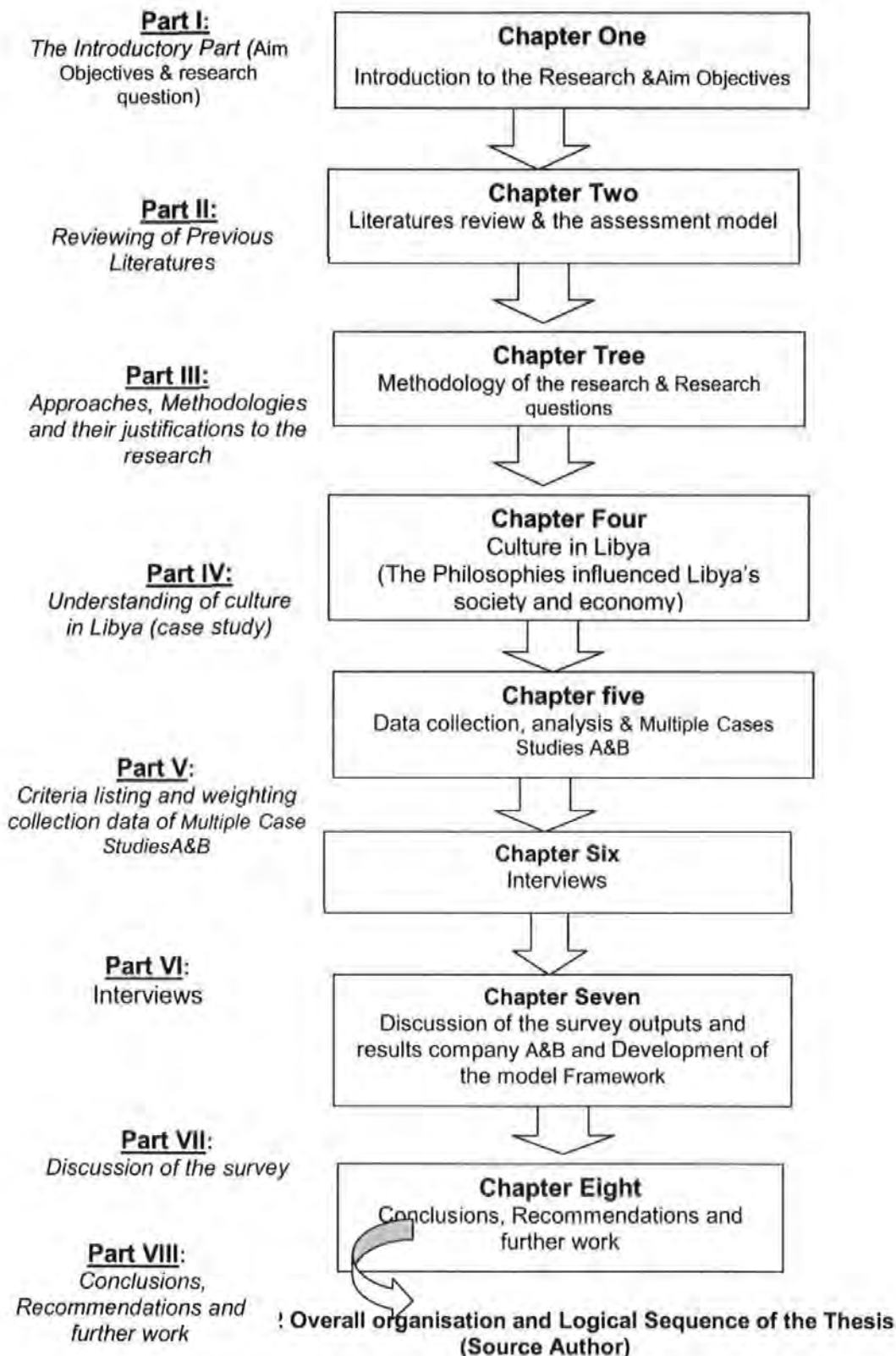
also considered in this chapter.

Chapter five (Libyan construction company survey) Presents the findings from a multi-component, intensive survey of two Libyan construction companies and analyses the major findings to highlight specific issues that point to generic barriers hindering the adoption of TQM in Libya and specific barriers that may be unique to the Libyan construction company.

Chapter six (Interviews both company A&B) Follow-up interviews with a sample of the questionnaire respondents to develop a deeper understanding of the barriers preventing the full adoption of TQM practices and which may be unique to the Libyan context.

Chapter seven includes a discussion of the survey outputs and results from the company survey. In this chapter, the researcher will conclude with the main points carried out in the whole work after discussion of research results, how the research aim and objectives were met, revisiting of research questions. Data Analysis presents the responses obtained and their classification. It describes the procedure for preparing the research data for the analysis process, and the analysis plan.

Chapter eight (Conclusions, Recommendations and further work).Implications for TQM in Libya and further work, the summaries and findings of the research as a whole and presents them in a categorized manner. Meeting the aims and objectives of the research, the contribution to existing knowledge, contribution and significance of the research, limitation of the research realization and determining of the research propositions, research propositions and critique of research methodology. Finally some suggestions for further research are proposed. See figure 2 for *Overall Organisation and logical sequence of the thesis*.



A number of appendices are presented at the end of the thesis relating to the different chapters introduced above, together with a list of references used in the literature review.

Chapter 2 - Research methodology

2.1 Introduction

This chapter is devoted to discuss research methodology and the main related concepts and issues. A justification of the methodology adopted to conduct this research is discussed and delineated. The concepts and types of research relevant to construction management are considered. The methods and procedures used for data collection and analysis are outlined and, the field study and research sample is described. The methodology forms an important part of the research as it assists the researcher in linking the methods to the conceptual framework and forms an overall structure of how these methods help in answering the research objectives. Both qualitative and quantitative techniques are used to obtain primary and secondary data. The justification for the selection of research methods is offered including their relative advantages and disadvantages.

According to Creswell (2003), mixing methods by the integration of quantitative and qualitative techniques has become increasingly popular in several fields of social scientific research. However, according to Creswell (1994, p.176) a false dichotomy exists between quantitative and qualitative approaches, and researchers should take care to make the most effective use of both paradigms when trying to understand social phenomena.

From the literature review that has been explained in detail in chapter one, the researcher established the aim, objectives, research questions and developed the conceptual framework of this study which involves common types of barriers. The research questions are the questions which identify the nature of the research problem that needs to be focused on by the researcher. Research questions are important in building theory for case studies.

2.2 Concepts and types of research

There is no consensus in the literature about a specific definition for research and it may have different meanings to different people (Hussey and Hussey, 1997). Research can be conducted in various areas such as the physical and life sciences; social and human aspects; or in the field of business and management and that is why it can be defined from different point of views and perspectives.

Research is “a systematic approach to answering questions” (Reeves, 1992: p.8). It is a purposeful investigation of an idea or subject to extend knowledge or explore a theory (Clough and Nutbrown, 2002). With relation to this study as a management research, Sekaran (2003) defines research as an organised, systematic, data-based, critical, objective, scientific enquiry or investigation into a specific problem, purposing to find answers and solutions to it.

There are several common categories and approaches by which research can be classified and conducted. Hussey and Hussey (1997), point out that research can be classified in terms of four grounds, which are:

1. The *purpose* of the research: the reason behind conducting the research.
2. The *process* of the research: how data will be collected and analysed.
3. The *logic* of the research: whether moving from the general to specific (theory is tested by results) or vice versa (theory is built from results).
4. The *outcome* of the research: whether solving a particular problem or making a contribution to knowledge.

Table 1 summarises the main research classifications according to (Hussey and Hussey, 1997) which are then defined in the next section.

Type of Research	Basis of Classification
Exploratory, descriptive, analytical or Predictive	Purpose of the research
Quantitative or Qualitative	Process of the research
Deductive or Inductive	Logic of the research
Applied or Basic	Outcome of the research

Table 1 - The main types of research

(Adapted from Hussey and Hussey 1997)

Exploratory Research: is concerned with specific issues or problem where there are very few previous studies carried out and then there is so limited information that can be referred to. The aim of exploratory research is to look for hypotheses, ideas or trends rather than testing them. Case studies, observations and historical analysis are the techniques most used to provide both quantitative and qualitative data.

Descriptive Research: this research describes an existence phenomenon and is applied to identify and provide information about the characteristics belong to a specific issue or problem. Statistical techniques are frequently used to collect data, which are often quantitative. Descriptive research tests problems in more depth than exploratory research.

Analytical Research: it is a type of descriptive research, however, it attempts to analyse and explain the reasons why and how some descriptions happen. Analytical research aims to identify and measure relations between the studied phenomena.

Predictive Research: while analytical research focuses on explaining the causes of having a particular situation, predictive research forecasts the possibility of a similar situation in a different place or time. Quantitative (Positivistic) Research: this research has an objective nature and focuses on

examining phenomena to provide measured results. It aims to collect and analyse the required data by using statistical techniques.

Qualitative (Phenomenological) Research: in contrast to the latter, qualitative research is more subjective in nature and incorporates examining and discussing perceptions to reach an understanding of social and human aspects.

It is important to address and discuss the main approaches of business and management research methodology, in order to justify the selected methodology for this study. Research methodologies can be divided into two main paradigms or schools of philosophies, which are positivistic, and phenomenological (Hussey and Hussey, 1997). Positivistic Research has its roots in natural and social sciences. It is a highly structured deductive approach aims to clarify the casual relationships and correlation between variables using quantitative data. Phenomenological Research on the other hand, is based on the way people view and understand a particular phenomenon under investigation. It aims to examine certain aspects of human activities by concentrating on the meanings rather than the measurements. Data collection and analysis in this approach is complicated (Saunders *et.al.* 1997, Saunders *et.al.* 2003, Johnson and Duberley 2003, Allison *et.al.* 1996; Hussey and Hussey, 1997; Remenyi *et.al.* 1998, Easterby-Smith *et.al.* 1993, Sekaran 2003).

In a number of cases, it has been seen that a combination of both has proved to be effective and so two types of data collection are used in this research, the first being qualitative. A qualitative technique to research design has implications for both its collection and analysis. Unlike quantitative data (next section), the richness associated with qualitative data cannot be collected in a standardised way. In a more colourful way Robson (1993) describes qualitative data as being associated with concepts that are characterised by their richness and fullness based on the opportunity to explore a subject in as real a manner as is possible (Saunders *et.al.*, 1997). However, during analysis, the non-standard and complex nature of the data collected will need to be classified into categories before it can be meaningfully analysed.

As discussed in Chapters one, there is a lack of structured frameworks to clearly define and identify barriers affecting total quality management and consequently a number of authors endeavour to bridge the gap and deliver valuable theoretical contributions. Accordingly, this study aims to examine the applicability of a proposed framework based on specific assumptions to identify barriers affecting implementation of total quality management improvement programme and the appropriate individuals' competencies that could match. It is intended to explore and investigate with real-world examples if the proposed integrated framework is workable in specific industries.

2.3 Research methodology and research method

Methodology, as it was discussed earlier, means the manner by which the elements of research process are structured and linked from defining the research problem to drawing conclusions under the research objectives umbrella. Reviewing the literature on conducting research demonstrated a scope of methodologies being adopted to carry out research. However, it can be argued that selecting the appropriate research methodology is not an easy task and therefore some considerations need to be taken into account. The researcher needs not to be constrained to a particular methodology and requires a deep understanding about the context of the research on hand. In addition, understanding the advantages and disadvantages of each approach is likely to guide choosing the most relevant methodology for the intended research (Bell, 2005). The suitable methodology is largely driven by the research topic and problem emerged from the literature review (Remenyi *et.al.* 1998). It is important to mention that the researcher's perception and experience, and available information about the research issue may have major impact on the selected methodology. The researcher role in identifying the most relevant approach (Allison, *et.al.* 1996) is significantly a function on the research problem or question.

Research is a hunt for knowledge and methodology is how to organise this 'hunt'. Research methodology in essence is a decision-making process. It is a system of interrelated decisions where every decision is affected by, and

consequently, influences every other decision (Brannick, 1997 in Brannick and Roche, 1997). Despite the variety of approaches to management research they all in essence share a problem-solving sequence (Gill and Johnson, 1991). Easterby-Smith *et.al* (1993) view methodology as a combination of techniques used to enquire into a particular situation. More specifically, this combination of techniques and problem solving methods aims to answer the question how, and is a philosophy to answer the question what (Checkland, 1981). Hussey and Hussey (1997) turn the attention that research methodology and research method terms are sometimes used interchangeably causing some confusion in the literature. Therefore they distinguish them by defining methodology as the overall approach to the research process from establishing the theory to the data collection and analysis process, whereas research method refers only to the means by which data can be collected and analysed. Jankowicz (2000) considers research method as a systematic and orderly approach applied for data collection so that information can be obtained from those data. It can be argued that research method is one aspect and part of research methodology. According to Hussey and Hussey (1997), there are key questions and issues that interpret the meaning of methodology such as: why to collect specific data; what data to be collected; source of collected data; when to collect; how be collected; how to be analysed.

2.4 Research philosophies and paradigms

Philosophers of science and methodologists have been engaged in a long-standing debate centred on the relative value of two fundamentally different and competing schools of thought or inquiry paradigms (Amaratunga *et.al*. 2002).

Logical Positivism uses quantitative and experimental methods to test hypothetical-deductive generalizations. Phenomenological (Interpretive) inquiry uses qualitative and naturalistic approaches to inductively and holistically understand human experience in context specific settings. This approach tries to understand and explain a phenomenon, rather than search for external causes or fundamental laws (Easterby-Smith *et.al* 1993).

According to Buttery and Buttery (1991:26), 'Positivism is built on hypothetic-deductive methods established in the natural sciences and assumes that the world exists independently of those who live in it'. Easterby-Smith *et.al* (1993) state that there are two assumptions to positivism: firstly, that reality is external and objective; secondly, that knowledge is only of significance if it is based on observations of this external reality.

	Positivist paradigm	Phenomenological paradigm
Basic beliefs:	The world is external and Objective	The world is socially constructed and subjective
	Observer is independent	Observer is part of what observed
	Science is value-free	Science is driven by human interests
Researcher Should:	focus on facts Look for casualty and Fundamental laws Reduce phenomena to Simplest elements Formulate hypothesis and then test them	focus on meanings try to understand what what is happening look at the totality of situation develop ideas through induction from data
Preferred Methods Include:	operationalising concepts so that they can be measured taking large samples	using multiple methods to establish different views of phenomena small samples investigated in depth or over time

Table 2 – Key research paradigms

(Source: Saunders *et.al*. 1997:74)

On the other hand, Saunders *et.al*. (1997:72), explain phenomenology as being based on the way people experience social phenomena in the world in which they live. It contrasts with the positivist approach, which treats the social world in the way it would be approached by the natural scientists. Phenomenology focuses on the meaning attached to social phenomena and attempts to

understand what is happening and why it is happening. The key features of both the approaches are summarised in Table 2. Both the approaches have their own advantages and disadvantages. Many scholars including Habermas (1970), Lincoln and Guba (1985), Taylor and Bodgan (1984), believe the task of social scientist should be to gather facts and measure how often certain patterns occur, and to appreciate the different constructions and meanings that people place upon their experience.

2.5 Quantitative or qualitative approach

Research methodology is always a compromise between options and choices and frequently determined by the availability of resources (Gill and Johnson, 1991). It is not necessarily to stick to a single methodology as this could affect the reliability of the research contribution. The literature witnesses a broad application of combined approaches. One reason for that is the way how to properly access the sources of information. There are several techniques that can be equally used to draw data either quantitatively or qualitatively. It is widely argued that a combined methodology can offer much more reliable data. A combination of quantitative and qualitative approaches is, therefore, applied to collect data. For instance, in some parts of the study interviews with managers, which are a qualitative technique, would be conducted in parallel with survey. It is not the methodology that can be called quantitative or qualitative methods. (Crompton and Jones, 1988 in Bryman, 1988) state it is difficult to study organisations without using both methods. It can be argued that using a qualitative technique- a face-to-face interview case study method- is essential for the benefit of the research as to judge the managers' perceptions and ensuring valid data. There are some other important features that encouraged applying a qualitative approach. First, is the researcher's experience in the field of study (i.e. construction industry), which enhanced the way to conduct the interviews more efficiently. Second, is that conducting the research in fairly new sectors requires further explanation to the participants to draw more reliable findings. Also, speaking the same language with many respondents is vital to warrant better understanding of the research context. Blank (2004). Indicates

that qualitative approach characteristic with discovering how people understand the situation or issue that the researcher is investigating and how that understanding guides their actions. Also, they demand that the researcher takes informants seriously in their own language and from their own point of view. A qualitative method seeks to develop knowledge by linking the accounts people give to an underlying body of theory.

According Strauss and Corbin, (1990; p. 34) although the use of a single methodology has been advocated by a number of authors, the issue is not to use one form or other but rather how these might work to gather to speed the development of the theory. They state that the qualitative should direct the quantitative and the quantitative feedback into the qualitative in circular, but at the same time evolving process with each method contributing to the theory in ways that only each can. However, to define the distinctiveness of qualitative research and to distinguish it from quantitative research can be problematic. But, the data derived from these two research methods reveal some significant differences. These differences are summarised in the table 3.

Quantitative data	Qualitative data
<ul style="list-style-type: none"> • Based on meanings derived from numbers • Collection results in numerical and standardised data • Analysis conducted through the use of diagrams and statistics 	<ul style="list-style-type: none"> • Based on meanings expressed through words • Collection results in non-standardised data requiring classification into categories • Analysis conducted through the use of conceptualisation

Table 3 - Quantitative and qualitative data

(Source: Saunders *et.al.* 1997:339)

According to Hussey and Hussey (1997; p. 151), qualitative research method provides more real bases of analysing and interpretation; in addition qualitative

approach helps to understand the how and why and also helps the research to be alert to changes that occur. Moreover qualitative approach presents problems relating to rigour and subjectivity. The disadvantages of this method are it could be expensive and time consuming, added to difficulty while analysing the data.

A quantitative research method is that the collection of data is separate from the analysis. Quantitative researcher needs to remain separate and be detached from the participants under scrutiny. Here, the researcher emphasise careful control and measurement. Hussey and Hussey (1997; p. 12) point out that “quantitative approach which is objective in nature and concentrate on measuring phenomena, therefore, a quantitative approach involves collecting and analysing numerical data and applying statistical tests”. The main methods of collecting data are through questionnaires and surveys. Questionnaires can be considered the most used and even though they may appear simple to use, there are many barriers that should be taken into consideration when designing the questionnaire, not only about the type of questions to be incorporated but also the overall format. Advantages of using quantitative research are results are reliable and provide great opportunities for the researcher to retain control and have theoretical focus for the research to use both of them in construction industry, which is the main used in this research.

2.6 Linking objectives to methods of research

It should be noted at this stage that although a distinction has been drawn between the both the qualitative and quantitative approach, a combination of both has been used to answer the research objectives. The explanation and justification of this is given in the following section.

2.6.1 Case study

Robson (1993:40), defines case study research as the ‘development of detailed, intensive knowledge about a single “case”, or a small number of related “cases”.’ This strategy is of particular importance as it helps in gaining a rich understanding of the context of the research and the process being enacted.

Morris and Wood (1991) stated that the case study approach also has the ability to generate answers to the questions 'why?' as well as 'what?' and 'how?'. Case study research has the disadvantage of having an 'unscientific' feel to it, but a simple, well-constructed case study can enable a researcher to challenge an existing theory and also provide a source of new hypothesis (Emory and Cooper, 1991).

2.6.2 Justification of selecting number and type of case studies

The researcher decided to use two case study companies (A&B), to do an in-depth analysis of barriers facing the TQM implementation in the Libyan construction industry. To understand more about the impact of the Libyan authorities on TQM implementation, and decided to interview management levels of the construction companies (A&B). The multiple case studies have been chosen to provide a comprehensive understanding of the various issues in the organisations relating to the TQM programme. Bell (1993) states that the case study method is particularly appropriate for individual researchers, because it gives the opportunity for one aspect of a problem to be studied in depth within a limited time scale. The great strength of the case study method is that it allows the researcher to concentrate on a specific instance or situation and to identify, or attempt to identify, the various interactive processes at work.

The research was carried out in Libya, where a total of two organisations out of 30 organisations over all the country and the case study chosen from the capital city (Tripoli) in construction public sector were approached about the nature of the research to discuss the research question, aim and objectives. The organisations used for the research were considered to be well established a wide range of construction facilities (building and civil engineering company in Libya), and company A, according to the country's scale, is one of the largest. The other organisation (B) used for the research was considered to be small size.

The multiple case studies can be chosen to provide a comprehensive understanding of the TQM implementation. Also there is not enough time for the researcher to study all public organisations as case studies (Doctoral

Philosophy time). The case studies will be chosen from the public sector as follows:

- One case study from the Libyan construction organisations, which is large size (A) .The Company, according to the country's scale, is one of the largest.
- One case study from the Libyan construction organisations, which is small size (B).

2.6.3 Selection of research design

The aim of the research design is to satisfy the research aim and objectives. The selection of the case study method is to gain the depth of understanding of the information necessary to identify and analyse the obstacles regarding the Libyan construction organisations (A&B) and to implement TQM. The case study will be the primary research methodology used in this research. Yin (2003) stated that the case study is the preferred strategy when 'how' or 'why' questions are being posed. This allows the researcher to determine not only what happened but also why it happened. The study's propositions sometimes derive from the "how" and "why" questions, and are helpful in focusing the study's goals.

Also Yin (1994) asserted that a case study investigator must be able to operate as a senior investigator during the course of data collection. There should be a period of training which begins with the examination of the definition of the problem and the development of the case study design. The investigator needs to know, such as: the reason for the study, the type of evidence being sought, and what variations might be expected. This could take the form of discussion rather than formal lectures. The structured interview is similar to a survey, and is used to gather data in cases. The questions are detailed and developed in advance, much as they are in a survey. The questions were designed to collect in-depth information on the following areas:

- What are the barriers affect knowledge and understanding of TQM philosophy and principles amongst Libyan Construction Company. (See part one in chapter five).

- To what extent are the elements of TQM applied in Libyan construction companies, and what barriers exist to prevent its full application in Libyan construction? (See part two in chapter five).
- To what the impact of the Libyan culture to implementation of TQM or to extent which there is a need for TQM implementation in Libyan construction? (See part two in chapter five).
- What kind of unique TQM implementation model should be developed in order to guide Libyan construction management in implementing TQM and How can this TQM implementation model be demonstrated in practice? (See chapter six Figure 6.4).

2.6.4 Conduct real case studies

After the researcher identifies the two case studies, an investigation of the TQM implementation will take place by using questions generated from the literature review to identify all types of barriers. In this stage, the researcher will use all research techniques to collect data such as interviews with different levels of the organisation; top management, middle management , first-line manager and employees the questionnaire will be submitted to all the level in two organisations (A&B) before the interviews

2.6.5 Conduct pilot case study

The aim of the pilot case studies is to give the researcher an idea about the problems, which may appear with interview questions or the questionnaire questions. The pilot study is important according to Creswell (1994) in that data from the pilot study may be used to enhance the validity of survey-questionnaires for the study. According to Creswell (2003) qualitative research is exploratory in nature and used by researchers in examining topics in which the variables and theory base are not known. That will make the research remedy the problems before the questions are used with the selected real case study organisations. The interviews and questionnaire questions will be finalised for use in the main case studies.

This research has been allocated to deal with the study of the practice in the Libyan companies (A&B), which deals with testing the degree of credibility and

consistency study data and described characteristics of the study and the presentation and analysis of data and test study. Researcher of truth rationale for the questionnaire after it had been presented to a group of professors, management and quality specialists at the University of the seventh of April, academic and also a group of professors at the University of Libya addition to the analysts statisticians in terms of the analysis of questionnaire data, has been introducing some amendments to the items on the questionnaire in the light of their comments and suggestions.

2.6.6 Questionnaires

According to Bell (1993; p.75) using questionnaire usually require less skills than semi-structured or in-depth interviews. The questionnaire was designed to collect appropriate and necessary primary data and information for achieving the purpose of this research, a questionnaire technique is the most convenient and efficient technique to obtain the data needed. Saunders *et.al* (2000; p. 279) point out that to maximize response rate, validity and reliability the issues need to consider careful design of individual question, clear layout of the questionnaire form, lucid explanation of the purpose of the questionnaire, and pilot testing.

The following criteria were used in designing the questionnaire: -

- Length of a Questionnaire, as a general rule, long questionnaires gets less response than short questionnaires. But more important than length is question content.
- The questions were clear and unambiguous; the goal is to eliminate the chance that the question will mean different things to different people.
- The questions asked were objective.

In general terms a questionnaire includes all techniques of data collection in which each person is asked to respond to the same set of questions in a predetermined order Bryman (1998). Some authors (for example Kervin, 1992) reserve the term for exclusively for surveys where the person answering the

question actually records their own answer. Others (for example Bell, 1993) use it as a more general term to include interviews, which are administered either face to face or by e-mail.

Questionnaires are a widely used data collection method. Since each respondent is asked to respond to the same set of questions, it provides an efficient way of collecting responses from a large sample prior to quantitative analysis.

Interviews (for objectives) unlike semi-structured interviews; the questions in the questionnaires are defined precisely before data collection. Moreover, the questionnaires offer only one chance to collect the data, as it is often difficult to identify respondents or return to collect additional information. The data collected through questionnaires has been grouped into four categories:

- 1) Attitudes, 2) Beliefs,
- 3) Behaviour, 4) Attributes.

Attitude variables record how respondents feel about something. They differ from belief variables where the record reveal what respondents think or believe is true or false. In contrast, data on behaviours and attitude are more straightforward to collect (Robson, 1993). When recording what respondents do, their behaviour is being recorded. Attributes include characteristics such as age, gender, marital status, education, occupation and income. This has evoked a general consensus that knowledge and awareness need to be understood in their social context. In turn, this can be applied in modifying behaviour. According to Matusak (1996), in order to emphasise the critical role of communication and the need for feedback, contended that managers have to think about themselves as people surrounded by mirrors of different kinds. They should note that what they do and what they think returns to them in their followers' behaviour, much as a boomerang does. Yin (1994) found the questionnaires to be an attractive way of collecting data by researchers. He also found that in order to be clear about the study's objectives one has to have a reliably constructed questionnaire, which may be very difficult to design and time consuming to implement. It is usually addressed in the form of a series of

structured written questions and given to a wide range of individuals for them to fill out. In addition, the aim of this technique is to explore a range of barriers such as personal attitude, opinions and feelings about a variety of issues, objects and situations. However, a questionnaire can be a reliable method for data collection because it involves a large number of samples. Therefore, a considerable amount of information can be obtained. It can also be carried out in a short space of time.

The advantages of using a questionnaire are that they can be sent to people who are difficult to get in touch with, they allow respondents time to reflect on the questions so that they can give more considered, and precise answers. They are not very time consuming. The disadvantages are that they rely heavily on respondents to fill them out, are guided only by written instructions and they offer little motivation. And you have to ask the right questions. The questionnaire consisting of 45 questions with multiple choices, 13 general questions about understanding the knowledge of TQM and was distributed to the construction company (A&B) in Libya. To analyse the findings, using the statistical package for the social science (SPSS 10.0 and 16.0 for windows) has been used which allows for easy sorting and manipulation of the data collected.

The survey was conducted during the period between 10th October 2007 and 12th of December 2007. The questionnaire was sent to different levels of management in the two case studies before the interviews were conducted to benefit from responses of open ended questions to ask questions in the interview covering some barriers they mentioned. Also, to know the extent of the quality manager, middle management, supervisors and employees' views on what kind of barriers that the company faced in implementing TQM programme. Moreover to understand more in-depth information about barriers, the researcher asked some other specific questions about issues that are important in TQM barriers implementation process according to this literature search and the questioner was given few months ago to test the respondent's answers. According to Yin (2003) states that interviews are one of the most important sources of information in case studies.

2.6.7 Interviews

Semi-structured interviews are part of a qualitative method and are used to conduct exploratory discussions to reveal and understand not only what and the how, but also to place more emphasis on exploring the why. 12 interviews questions In this research (See Appendix II), they have been used to identify the TQM needs as seen from two different perspectives, According to Yin (1994), semi-structured interviews may be used to explore and explain themes, which have emerged from the use of questionnaires. Semi-structured interviews have the advantage of providing an opportunity of probing the interviewees to explain, or build on, their responses. They may also lead the discussion into areas, which have previously not been considered, and may have a significant importance in answering the research questions.

However, Robson (1993) points out that a lack of standardisation in these interviews may lead to concerns about reliability. A response to the issue of reliability is that the findings from using non-standardised research methods are not necessarily intended to be repeatable since they reflect reality at the time they were collected, in a situation, which may be subject to change (Marshall and Rossman, 1989). However, qualitative research using semi-structured interviews will be unable to make generalisations about the entire populations, where this is based on a small and unrepresentative number of cases.

Data collection methods	Top management	Middle Managers	First line-managers	Employees
Interview	2	3	5	30

Table 4 People interviewed in company A.

(Source: Author)

The test survey was conducted during the period between 15th of September 2008 and 29th of October 2008. The findings were used to inform the interview questions in this research, that was why it was analysed first and the questionnaire findings will be displayed first. Tables 4 and 5, shows the number and type of people in each level that were interviewed questions in company

(A&B). To enhance the validity and reliability of the responses, the data collected by seeking responses from four groups of respondents in each case study (See Appendix II).

Data collection methods	Top management	Middle Managers	First line-managers	Employees
Interview	1	2	2	10

Table 5 People interviewed in company B

(Source: Author)

2.7 Questionnaire-based survey

Closed questions (multiple choices of 45 questions and 13 general questions in both companies A&B) give the respondent a number of options to choose from and are far easier to fill in, and measured and compared more easily. In addition, rating questions were used in many questions rather than purely yes/no alternatives. The ratings were used to obtain subjective assessments of the respondents' feelings. The questionnaire used in this research is constructed in a way to test the applied integrated framework with its two main parts (One and Two). In the number one, the main goal is to identify and analyse the barriers that affect to understanding the knowledge of total quality management implementation on construction management in Libyan public sector organisations, and (13 questions) to know the understanding the knowledge of total quality management (For the structure of questionnaire see Appendix II). Quality-related data should also be used to evaluate the performance of staff works at different levels and the performance of the whole company. In order to have an effective evaluation, a quality information system is truly necessary, as it is an organised method of collecting, storing, analysing, and reporting information on quality to assist decision-makers at all levels (Juran, 1993). To avoid such an interpretation, it here suggested that leadership differs between differing levels of management in the following way:

First- line manager: direct operating employees only, they do not direct other managers. In essence, first line managers are responsible for the task completion of groups or teams of operatives. In particular, middle management and first -line managers will be operating in new ways of control they will serve as boundary managers, coordinators, and leaders who assist line workers in getting their jobs done.

Middle managers: direct the activities of other managers and sometimes also those of operating employees. A principle responsibility of middle managers is to direct the activities that implement the policies of the organisation. Sinclair and Zairi (2001) consider the act of maximizing employee involvement in the quality process requires middle managers within the organisation to make major adjustments.

Senior managers: small in number, this group is responsible for the overall management of the organisation. It establishes operating policies and guides the organisation's interactions with its environment.

The respondent's comments gained by the means of interviews and the space provided at the end of the questionnaire. The 4-point interval scale ranging from " most significant " to " less significant " was used to rate the significant of the elements and principles and 5- point likert scale ranging from " strongly agree " to " strongly disagree " was used to identity the respondents degree of agreement with the statements offered . Validation of the survey instrument: reliability and validity test before discussing the survey results in terms of the specific tools/techniques studied, this section will present the questionnaire validation process. Therefore, reliability and validity tests were performed to determine the appropriateness of the proposed classification, making use of the approach adopted by Saraph *et.al.* (1989). Cronbach's alpha (α) model, which is aimed at measuring internal consistency, was utilized in the reliability analysis. The values of alpha reflect the degree to which elements in a group are homogeneous and the extent to which these elements are related to each other.

2.7.1 The cover letter

The cover letter is important as much as the questionnaire it self. It should be brief, objective clear and confidential (Hague, 1993). So, every a cover letter was attached to the questionnaire to tell the respondent the objectives of the survey and emphasises the importance of participation in the study and how the questionnaire can be returned. The letter was of formal style written showing the names of the researcher (See Appendix I).

It is imperative to say that the design of the questionnaire came after carrying out a pilot study in organisation (A&B) before launching the final form which were 79 questions and reduced to 45 questions and 12 interviews questions some suggestions and useful amendments were made. Table 6 explained shows the link between them.

Q1= questionnaire 1

IQ1= interview question 1

To understand more about the impact of the Libyan authorities of TQM implementation, the researcher decided to ask questionnaire questions and interview all the management level and employees The questionnaire was submitted to the managers (Top management, middle manager, first-line manager and employees) before conducting the in-depth interviews to cover all types of barriers effect to implement TQM in construction industry with regard to the aim and objectives of this research. In this research two case study companies A and B in construction industry were chosen by the researcher for identify and analysis the barriers affect to implement TQM programme. The questionnaire and interview technique was chosen as the main tool to collect the data. Table 6 illustrates the links between interview questions, questionnaire questions and the conceptual framework elements.

Barriers (group in conceptual framework)	Questionnaire question	Interview questions	Related literature review
	Q	IQ	
External and Internal Barriers	1. There is a lack of understanding of the purposes of TQM in the industry.	I'Q1 How are the concepts and principles of TQM implemented?	Yusof and Aspinwall (2000), Al-Zamany et.al. (2002), Lewis (1992), Wilson (1993), Wong and Fung (1999), Krygier (1993)
	2. There is a lack of understanding the benefits of TQM in the industry.		Drensek and Grubb (1995), Farid and Wahba (2004), Farley, (1971), Haigh and Morris (1995), Hickson and Pugh (1995), Hill and Wilkinson (1995), Hokoma, and Khan (2008), Hoyle (2001), Juran (1989), Kam and Tang (1997), Kanji (1996), Kanji and Wong (1998), Kanji (1990), Kumar (2006), Oakland (1995).
	3. There is no awareness of TQM through employees in the industry.		Juran (1986), Crosby (1996), Al-Zamany et.al., 2002), Yeh (2003)
	4. There is a lack of top management commitment to TQM generally within the industry.	I'Q2 What are the main barriers to increasing the knowledge and understanding of TQM in Libyan construction companies?	Curry and Kadasah (2002), David and Murat (1997), Morris and Haigh (1996a), Kanji and Asher (1993), Ishikawa (1985), Crosby (1999), Juran (1988).
	5. There is no government financial support to help the organisation to implement a TQM system.		Hokoma and Khan (2008), Hoyle (2001), Juran (1989), Kam and Tang (1997), Kanji (1996), Kanji and Wong (1998), Kanji (1990), Kumar (2006), Konz and Ryan (1999), Kumaraswamy and Dissanayaka (2000), Lamb (1987), Layder (1998), Love and Li (2000), Low and Goh (1998).
	6. External socio-political factors affect the organisation's TQM strategy.	IQ3 What are the main barriers facing organisations that wish to start implementing TQM practices?	Dickenson <i>et.al</i> (2000), Egan (1998), Elfathaly (1979), Evans and Lindsay (1999), Farid and Wahba (2004), Farley R., (1971), Fewing, P. (2005), Flanagan <i>et.al</i> (1998), Flood (1993), Flynn <i>et.al</i> (1995), Hill and Wilkinson (1995), Hokoma and Khan (2008).
	7. There are no outside pressures to make the organisation implement improvements in its quality management systems.		Flood (1993), Flynn <i>et.al</i> (1995), Furrer <i>et.al</i> (2000), Haigh and Morris (1995), Hickson and Pugh (1995), Hill and Wilkinson (1995), Hokoma and Khan (2008), Hoyle (2001), Juran (1989), Kam and Tang (1997), Kanji (1996), Kanji and Wong (1998), Kanji (1990), Kumar (2006)
Non-technical barriers	8. Communication between departments is ineffective.		(Samson 1997), Goetsch and Davis (2000, p.307) Likewise, Kelly (2000) quoted in Daft (1997), Balzarova et.al. (2002) Thiagrayan and Zairi (1997) Macedo-Soares and Lucas (1996) who quoted Schall (1983) Samson (1997) Zeland. Najmi and Kehoe (2000) quoted Laza and Wheaton (1990), Boyett et.al. (1992), Brown (1993), Katz (1993), Goodman et.al. (1994), Zangwill (1994), Dale and Cooper (1994), Tatikonda and Tatikonda (1996)
	9. There is a general sense of low morale in the		Kanji (1996) Kanji and Wong (1998), Kanji (1990), Kumar (2006), Konz and Ryan

	organisation.		(1999).
	10. There is no cross-functional cooperation between departments.		Bonny and Frein (1980), Burati and Oswald (1993), Cameron and Quinn (1999), Chase (1993), Cole (1995), Cotton (1993), David and Murat (1997), Deming (1993), Dickenson <i>et.al</i> (2000), Egan (1998), Elfathaly (1979), Evans and Lindsay (1999), Farid and Wahba (2004), Farley (1971).
	11. There is no employee involvement in management decisions.		Costin (1995), Hoyle (2001), Dale (1999), Ishikawa (1985), Crosby (1999), Juran (1988) Hele (2003), Cherrington (1995), Model for Total Quality Management (1994), American Baldrige Quality Award (1999), (Morgan and Murgatroyd (1994), Ludwig-Baker (1999), Brown (1992), Cotton (1993), Werther (1981).
	12. Quality objectives are clearly identified to employees.		Ishikawa (1985), Crosby (1999), Juran (1988) Hele (2003), Cherrington (1995), Model for Total Quality Management (1994), American Baldrige Quality Award (1999), Morgan and Murgatroyd (1994), Ludwig-Baker (1999), Brown (1992).
	13. There is no customer feedback system.		Balzarova <i>et.al</i> (2002), Glover and Siu (2000), Amar and Zain (2002), Tang and Kam (1999), Moser and Bailey (1997), Mo and Chan (1997), Lee <i>et.al.</i> (1999), Srinidhi (1998), Goetsch and Davis (2000), Kelly (2000).
	14. There is a lack of cooperation from customers.	IQ4 From your experience in this field, what are the main barriers facing the implementation of this system in the Libyan construction industry generally?	Chapman and Hall (1995), Kanji (1990), Blakemore (1989), Juran, (1992), O'Grady (1992), Anderson <i>et.al.</i> (1994a).
	15. TQM is an additional workload to the established quality management.		Kanji (1996), Kanji and Wong (1998), Kanji (1990), Kumar (2006), Konz and Ryan (1999), Kumaraswamy and Dissanayaka (2000), Lamb (1987), Layder (1998), Love and Li (2000).
	16. Top management provides financial support to the employees to apply and improve quality programs.	IQ5 In your opinion, what factors are helpful for the implementation of TQM?	Curry and Kadasah (2002), Brown <i>et.al.</i> (1998).
	17. Customer feedback in the organisation is not generally acted upon.		Glover and Siu (2000), Lee <i>et.al.</i> (1999).
	18. Training targets in the organisation are generally not achieved.		Deming (1986), Sun (2000), David and Murat (1997).
Technical barriers	19. There is a lack of information on TQM in the organisation.		Sun (2000), Awan and Bhatti (2003), Amar and Zain (2002), Lee <i>et.al</i> (2003), Saunders and Preston (1995).

20. Management problems are analysed to know the reason behind these problems.		Bratton and Gold (1999), Brown <i>et.al</i> (1994), Burati <i>et.al</i> .(1992), Cocheu (1995), Cole (1995), Balzarova <i>et.al</i> . (2002), Dickenson <i>et.al</i> . (2000), Crosby (1996), Chin <i>et.al</i> . (2000).
21. TQM systems are too difficult to learn and implement.	IQ6 How are the responsibilities for quality allocated and undertaken your organisation?	Deming (1986), Sun (2000), David and Murat (1997), Oakland (2000), Riley <i>et.al</i> . (2004), Triandis (1990, 1994 and 2002b),Yusof and Aspinwall (2000) .
22. No proper organisational structure has been developed to implement TQM.	IQ7 What pressures, inside or outside your organisation affect how you manage quality?	Lee <i>et.al</i> . (1999), Srinidhi (1998) Goetsch and Davis (2000), Kelly (2000), Carlsson and Carlsson (1996), Drucker (1988), Furrer <i>et.al</i> (2000), Motwani <i>et.al</i> (1996), Oakland (2000), Glover and Siu (2000).
23. Insufficient technology and poor quality management practices currently exist in the organisation.		Hoyle (2001), Juran (1989),Kam and Tang (1997), Kanji (1996), Kanji and Wong (1998), Kanji (1990), Kumar (2006), Konz and Rvan (1999), Kumaraswamy and Dissanayaka (2000), Lamb (1987), Layder (1998), Love and Li (2000), Low and Goh (1998).
24. There is a lack of local consultants properly qualified in TQM within the sector.	Q9 How is authority for decisions on quality matters distributed within your organisation?	Najmi and Kehoe (2000), Boyett <i>et.al</i> . (1992), Brown (1993), Katz (1993), Goodman <i>et.al</i> . (1994), Zangwill (1994), Dale and Cooper (1994), Tatikonda and Tatikonda (1996).
25. There is a lack communication from senior management level to employees.		Hele (2003), Cherrington (1995), Model for Total Quality Management (1994), American Baldrige Quality Award (1999), Morgan and Murgatroyd (1994), Ludwig-Baker (1999), Brown (1992), Cotton (1993).
26. There is no leadership on quality issues in the industry.	IQ10 Do any Libyan government departments push the company to implement TQM?	Juran (1974), Adair (1983), PROJEX LIBYA. (2006), Crosby (1979), Ludwig-Baker (1999), Hoyle (2001).
27. Top management is willing to adopt the TQM concept.		Cameron and Quinn (1999), Ahire <i>et.al</i> (1996), Smith <i>et.al</i> .(1993).
28. There is a lack of expertise in Total quality management in the industry generally.	IQ11 What do you think about TQM generally?	Laza and Wheaton (1990), Boyett <i>et.al</i> . (1992), Brown (1993), Katz (1993), Goodman <i>et.al</i> . (1994), Zangwill (1994), Dale and Cooper (1994), Tatikonda and Tatikonda (1996).
29. There is a strategic vision for the future about TQM in the organisation.		Balzarova <i>et.al</i> . (2002), David and Murat (1997), Ahire <i>et.al</i> (1996), Smith <i>et.al</i> .(1993), Egan (1998), Cameron and Quinn (1999).
30. The industry does not generally allow time for TQM.		Maull <i>et.al</i> (2001), Milakovich (1990), Rad (2006), Robert (1996), Saha and Hardie (2005), Schwartz (1999), Tata and Prasad

			(1998).
	31. The organisation trains its employees without a clear purpose.		Sun (2000), David and Murat (1997).
	32. The employees see the total quality management system as a tool to criticise employee performance.		Chapman and Hall (1995), Kanji (1990), Blakemore (1989), O'Grady (1992), Anderson <i>et.al.</i> (1994a)
Organisational culture barriers	33. The promotion of managers in departments within the company is not based on qualifications.	-IQ8 Are there any specific politics, economic, socio-cultural or technological factors that influence you thinking about TQM?	Berry. (1990), Riley and Brown (2001), Deming (1993), Gallegar (1997), Crosby (1979), Dale (1999), Deming (1986), Egan, (1998), Haigh and Morris (1995), Hofstede (1980, 1991 and 2001), Johnson and Scholes (1993), Kanji (1996), Kumar (2006), Low and Winifredo (2000) , Oakland (2000), Riley <i>et.al</i> (2004) , Triandis (1990, 1994 and 2002b), Yusof and Aspinwall (2000).
	34. Employees resist changes to quality management systems in the organisation.	IQ12 Are you aware of any other barriers facing the company that would hinder its ability to adopt TQM	Cameron and Quinn (1999), Claver <i>et.al</i> (2001), Hickson and Pugh (1995), Hofstede (1991), Holt (1998), Mattila (1999).
	35. A bureaucratic culture is prevalent in the organisation.		Dobbs (1993), Brown (1995), Claver <i>et.al.</i> (2000), Al-Khalifa and Aspinwall (2000), Lipovaliz <i>et.al.</i> (1999), Thomas and Au (2002), Triandis (1990, 1994 and 2002a), Wilkinson (1994), Yukl (2002), Yusof and Aspinwall (2000), Zairi and Mashari (2005).
	36. Many people are appointed to positions without having the skills to undertake the role effectively.		Collins (1998), Triandis (2002b), Hemmington (1998), Cameron and Quinn, (1999).
	37. Employees have difficulty understanding TQM requirements.		Tatikonda and Tatikonda (1996), Yusof and Aspinwall (2000), Al-Zamany <i>et.al.</i> (2002), Lewis (1992), Wilson (1993), Wong and Fung (1999), Krygier (1993).
	38. Different departments have different operating systems.		Samson (1997), Macedo-Soares and Lucas (1996), Fuentes <i>et.al.</i> (2000)
	39. The family history of individuals has a major influence on operational management.		Hill and Wilkinson (1995), Johns (1960).
	40. There is high employee absenteeism.		Al-Khalifa and Aspinwall (2000), Berry 1990), Ghobadian and Gallear (1997), Tata and Prasad (1998).
	41. Employees are not working to improve the future of the organisation.		Deming (1996), European Quality Award (1994), Samson (1997).
	42. The organisation lacks a motivation and reward system		Schonberger (1994), Ellecker (1998), Macedo-Soares and Lucas (1996), Ngai and Cheng (1997), Storey (1992), Low and Pan (2004).
	43. Employees want to follow instructions rather than to create proposals in their jobs.		Wilkinson <i>et.al</i> (1994), Quazi <i>et.al.</i> (2002), Arnold (1994), Flanagan <i>et.al.</i> (1998), Low and Goh (1996).

	44. There is no government financial support to help the organisation to implement a TQM system.		Nesan and Holt (1999), Love <i>et.al.</i> (1998), Wright <i>et.al.</i> (1992), Jobber (2001), PROJEX LIBYA (2007), Curry and Kadasah (2002), Mersha (1997), Zhao <i>et.al.</i> (1995), Awan and Bhatti (2003), Lipovatz <i>et.al.</i> (1999), Fuentes <i>et.al.</i> (2000), Moser and Bailey (1997), Wilson, (2003), Tichey (1983).
	45. There is a shortage of studies from governmental department to help guide the organisation in developing a TQM system		Mersha (1997), Zhao <i>et.al.</i> (1995), Awan and Bhatti (2003), Lipovatz <i>et.al.</i> (1999), Fuentes <i>et.al.</i> (2000), Moser and Bailey (1997), Wilson, (2003), Tichey (1983).

Table 6 Links between survey questions and the conceptual framework elements

(Source: Author)

2.7.3 Significance tests

As has already been stated, the respondent companies rated the perceived importance of the tools/techniques higher than the extent to which they were used. Statistical tests were performed in order to ascertain whether there was any significant difference between current use and the level of perceived importance for each group of tools, making use of the approach according to Yusof and Aspinwall (2000). Levene's (1960) test was computed to verify the assumption of equality of variances between both samples when performing ordinary comparison t-tests and has been considered in the results presented in this chapter. Levene's original paper only proposed using the mean. Brown and Forsythe (1974) and Bradley, (1968) extended Levene's test to use either the median or the trimmed mean in addition to the mean. Instead of looking at the variances across the groups as some indication of differences in population variances, we first find the Deviations around the average in each group. So, what we do is a simple one way analysis of variance on these deviations and if the F ratio is significant we reject the homogeneous variance assumption and that is why used this test. Moreover the test has been used in a wide variety of applications, e.g. clinical trials, astronomy, marine pollution, business, auditing and law cases.

For the structure of questionnaire and the interpretation of the results (See Appendix III). Descriptive statistics aims to provide benchmarks summary of the available data on the elements of the sample used as measures of central tendency and dispersion measurements and measurements combine measures

of central tendency and dispersion criteria and test (t-test). It was five levels to answer the questionnaire distributed to paragraphs representing every level and to answer certain weight range of (1-5) for the purpose of statistical analysis, as explained below:

Range	Scale ranging
1	Strongly Disagree
2	Disagree
3	Not Applicable
4	Agree
5	Strongly Agree

Table 7 – Likert scale for questionnaire responses

(source: Flowerdew and Martin. 2005)

This was to determine the degree of influence or application Aomlaemh variables comprehensive quality of the paragraphs contained model questionnaire (see Table 7) by the average answers paragraphs and ratios impact or appropriateness or application, as follows:

influence the degree of influence (Weaknesses / force)	Ratio (%)	Average answer
very weak	20-39.99	1-1.99
Weak	40-59.99	2-2.99
Average	60-69.99	3-3.49
Good	70-89.99	3.5-4.4
High	90-100	4.5-5

Table 8 – Variables for analysing question responses

(Source: Lord and Novick 1968)

However according to Lord and Novick (1968) stated Cronbach's alpha will often result in a test that is homogeneous in that they approximately satisfy a barriers analysis with one common factor. The reason for this is that Cronbach's alpha increases with the average correlation between items, so optimization of it tends to select items that have correlations of similar size with most other items. Estimate test-retest reliability when administer the same test to the same sample on two different occasions. This approach assumes that there is no substantial change in the construct being measured between the two occasions. Lord and Novick (1968).

To verify the stability of each part of the questionnaire parts and transactions were signs of stability enjoyed stability and consistency acceptable to the goals of scientific research is a test of credibility Alpha weak if less than (60%), if acceptable (60% -70 %), good if more (70% -80%) and increased (80%) is excellent and whenever approached one true measure of the results of the test are good (1). Table No. (1) The value of coefficient alpha of the paragraphs of the questionnaire related to the variables was divided paragraphs study as follows. The study community consists of 2 Libyan companies and the number of respondents included 322 employees.

The measure of the individualism-collectivism cultural variation was developed by Singelis, *et.al.* (1995). There are 32 items, and respondents are asked to indicate their disagreement/agreement with each on a scale of 1 to 5 (where 1 = strongly disagree and 5 = strongly agree). Development to all levels according to (Bluedorn, *et.al.*, 1999) was used, which is a measure of how many things people prefer to do it. Respondents were asked to indicate their disagreement/agreement with each statement on a scale of 1 to 5 (where 1 = strongly disagree and = strongly agree).

2.8 Data analysis and positionality

Fink (1995) takes the view that the effectiveness and usefulness of questionnaires depends largely on the clarity of its presentation. In quantitative research, data becomes more distinctive and clear for analysis than qualitative research. Therefore, tables of statistics and numerical values will be presented

to illustrate each case study's data and the results of applying the framework. Qualitative data would be in the form of words, such as descriptions of events, situations, people, interactions, and observed behaviours. This type of data can be described as being raw data. Similarly, quantitative data comes in the form of numbers, and the use of measurement in the analysis of the results. This type of data relies on the use of instruments such as lists, charts, and tables to maximise clarity and to provide a framework in order to limit data collection to certain predetermined responses. After examining the most popular questionnaire analysis techniques, the researcher has decided to try to use a mixture of them in both case study companies on construction sector (A&B).

Positionality according to Flowerdew and Martin (2005) is how your own identity will shape the interactions that you have with others, thereby influencing the outcome of the research. He further stated that: Sharing the same background or a similar identity to your informant can have a positive effect, facilitating the development of a rapport between interviewer and interviewee and thus producing a rich, detailed conversation based on empathy and mutual respect and understanding (Flowerdew and Martin. 2005:113). Throughout the questionnaire survey concerns were raised by respondents about the researcher being affiliated to a political party. Those concerns arose because it was an election year and persons had reservations. In addition there was an enumeration exercise taking place at the time and residents complained about answering too many questions. However once the purpose of the research was explained to the respondents, most decided to participate in the survey. In the final analysis what is important in terms of the researcher's position is awareness and acknowledgement of how their position may affect the research (Clifford and Valentine, 2003).

2.9 Research process

Research Process, aim and objectives of this research Also, it includes research questions of this research, and a brief outline of the research process.(see figure 3).

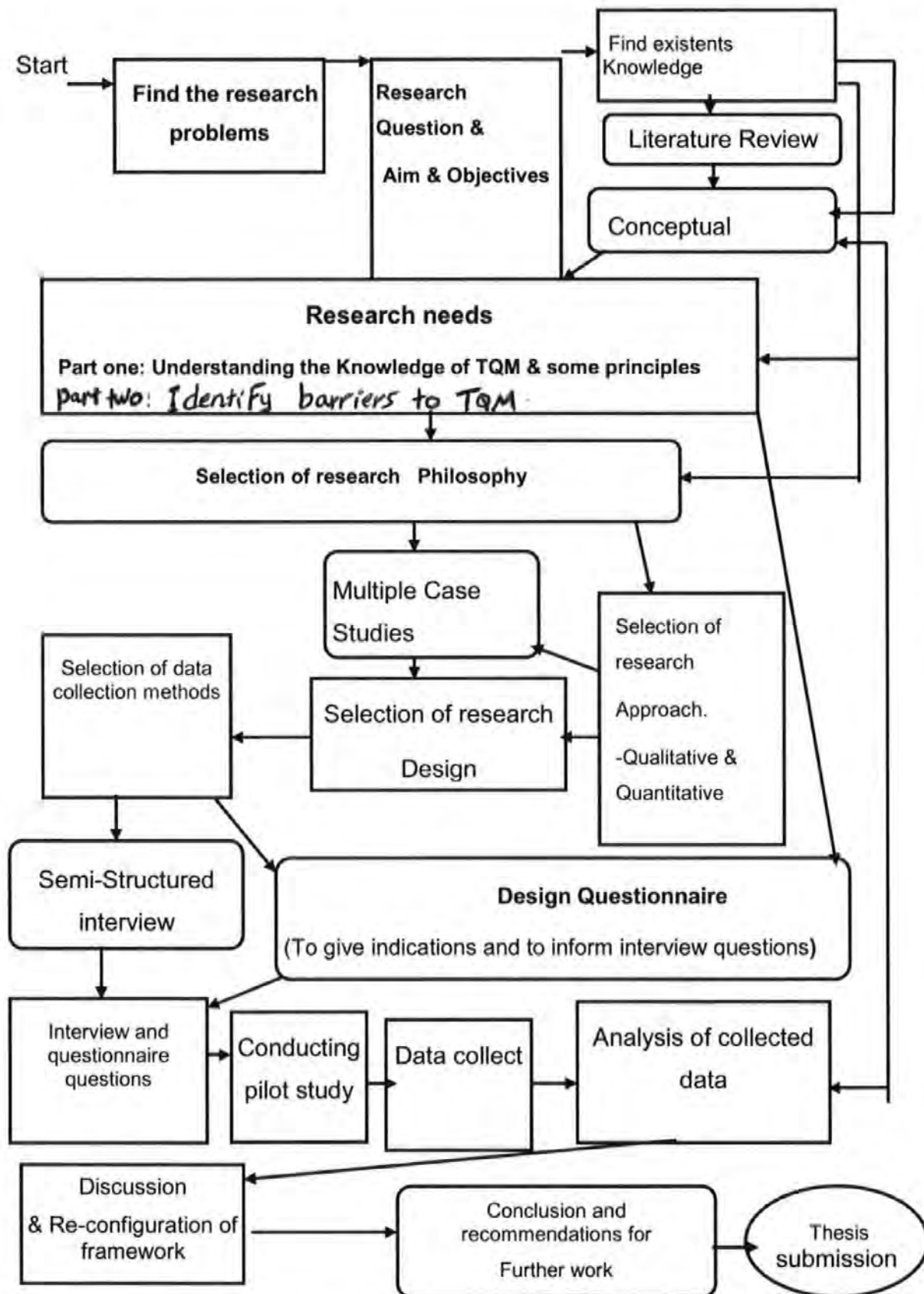


Figure 3 – The Research Process

(Source: Author)

2.10 Summary

The objective of this chapter is to examine different methods used to conduct the research. The methodology forms an important part of the research as it assists the researcher in linking the methods to the conceptual framework and forms an overall structure of how these methods help in answering the research objectives. Both qualitative and quantitative techniques are used to obtain primary and secondary data. The justification for the selection of research methods is offered including their relative advantages and disadvantages resulting in the use of three different research methods to answer the objectives and achieve some level of justification for the conceptual framework. In order to construct successful research, it is essential to understand management research philosophy, and thereby to select appropriate methods to achieve the aim and objectives.

Chapter 3 - Literature review

3.1 Total Quality Management (TQM)

The management philosophy based on TQM has generated significant interest in various economies across the World, a phenomenon that Kanji (1990) called the second industrial revolution. The increased awareness by senior management, that quality is an important strategic issue, has made it an important focus for attention at all levels of an organisation, something that Crosby (1979), Juran (1986) and Deming (1986) all point to as evidence that the organisation has adopted a TQM philosophy. However, different researchers have adopted different definitions of TQM. Smith *et.al.*(1993) *et.al.* (1993) said one of the common reasons for the failure of TQM is the cultural position of the company. The implementation of a TQM required a culture change and change in management behaviour. The literature will identify the important TQM culture elements that contribute to successful implementation of TQM. These elements should be adopting by the construction industry in implementing TQM in Libya. Further, companies are prepared to only implement those aspects of total quality management (TQM) programs that will provide them with competitive advantage and improve their overall performance and the organisations must use a systems approach to manage their interrelated processes. Wilkinson (1994) cited that TQM is a philosophy of management derived from the work of the quality gurus. It is based on three fundamental principles:

- Customer orientation to satisfy customer requirements and expectations.
- Process orientation, the activities to be performed as process (input-process-output).
- Continuous improvement.

The justification of adoption of the Total Quality Management is based normally on its benefits and their effects on the organisation's future. According to Street and Fernie (1993), the justification for a firm to become total quality

management (TQM) is normally based on the premise that it will acquire benefits. And that increase of the awareness of quality in general is a benefit obtained by the organisations with the total quality management (TQM) programme (Waldman, 1997). According to Hellsten and Kelfsjö (2000) stated that total quality management (TQM) seen as a continuously evolved management system consisting of values, methodologies and tools, the aim of which is to increase external and internal customer satisfaction with a reduced amount of resources. Moreover said different values are included in the concept of TQM by different authors, as well as in different quality awards.

3.1.1 Understanding TQM and the requirements

The TQM concept and approach are well-understood and widely practiced in Europe, North America and Japan and growing economies of East Asia. However, some firms have experienced difficulties in implementing TQM successfully (Krygier, 1993). These difficulties may not be due to the TQM concept itself; rather, there might have been problems stemming from the cultural factors. However, this often resulted in missing the whole picture of TQM. According to Wong and Fung (1999) who indicated that the quality programs implementation in developing countries failed due to the lack of understanding of quality management (QM). Yusof and Aspinwall, (2000) stated the failure of understanding of top management of TQM programmes requirements and the implementation process. However, it is clear that top management need to have a good understanding of the purpose of the TQM, how its requirements are implemented, ways to measure its business impact and areas in which benefits may lie. According to Al-Zamany *et.al* (2002) the lack of understanding processes the people need to know and understand the internal and external processes that may be affected when improvement in any process is required. Also Lewis (1992) found no difference between the American and Spanish quality managers and he attributed this to their common lack of knowledge about TQM. Also according to Schmoker and Wilson (1993) one of the most critical challenges to the companies is to provide all staff with a comprehensive understanding of TQM.

3.1.2 Awareness of TQM

Total Quality Management (TQM) is a way of thinking and a set of continuous and improvement processes for individuals, groups and whole organisations by understanding awareness of TQM as discovering better process. (Juran1986).

Crosby (1996), states that the purpose of awareness is to let every one feel that they belong to a quality organisation. In addition, awareness means that the staff in an organisation understands the management's quality policy. If the levels of awareness of QMS issues in an organisation are very low there may also be a poor understanding about the importance of quality in international trade and globalisation of world markets. It is a result of lack of information, education and training programs available on quality issues (Al-Zamany *et.al* 2002). According to Yeh (2003), the majority of the studies were based on the assessment of managers' awareness of a specific principle or practice of TQM like teamwork or training.

3.1.3 TQM and customer satisfaction

Total customer satisfaction requires the organisation to know itself, its product, its competition, and its customers (Fox1995) said the following ways as:

- *Know your customers:* get to know your customers. It's not always obvious who your customers are. Customers are all those people touched by the product or service, internal and external to the organisation. To continue to satisfy the customers, all customers must be identified, and then the target customers are must be determined. Once the target customers are identified, customer needs and expectations must be determined. Customer expectations are dynamic; they continuously increase and change. So a continuous review is necessary to ensure customer satisfaction.
- *Understanding customer needs and expectations:* The identification of customer needs and expectations requires systematic, thorough, and continuous market research. The most important aspect of this process is to listen to the customer.

- *Changing customer needs:* Customer needs are not static; they are always changing. Once customer needs are identified, they must be continuously monitored to ensure that the product or service still satisfy them.
- *Develop customer relationships:* to ensure that the organisation is continuing to satisfy the customer, a relationship with the customer is critical. Relationship demand continuous attention it requires communication, support, and responsiveness communication, especially listening, is essential. The customer needs to be involved in as many aspect of the product as possible. Support must be available to help the customer with the product after it is received. Responsiveness is a key to continuing the relationship.

TQM programs within the construction have a tendency to promote a corporate culture which emphasises customer service. Advocates of cultural change strongly encourage management to identify the organisations' customers and satisfy their expectations (Juran 1992). Anderson *et.al* (1994) highlighted that TQM requires management of an organisation to determine customer needs and expectation and change them to requirements. Then the top management should communicate these requirements among the organisation and provide necessary resources to address customer satisfaction. However, satisfying of internal and external customers is one of the main reasons to adopt the new TQM because it is mentioned in many studies in different countries in the literature.

The principle of Customer is King emphasises that quality is defined in terms of the customer and that the customer must judge the quality. Therefore, the customer must be regarded as a king and as always being right. Based on this principle, the overall aim of the business must be customer satisfaction and meeting customer's needs and requirements. Kanji (1990) said the principle of everyone participates is based on the conception that everyone in the organisation from all functional levels, including top and middle managers and first line operatives, must participat and be involved in the quality improvement process. The

principle also stresses that it is imperative to involve organisation's suppliers and customers in designing and planning for quality.

3.1.4 Involvement of people in TQM

Empowerment usually requires changes in the organisation's infrastructure. Employees will be more motivated to accomplish organisational goals and objectives if they have the authority to make decisions (Costin 1994). When the people at all levels are fully involved in the organisation, this would enable their abilities to be used for the organisations benefits. (Hoyle 1994) stated the principle is expressed as follows "people at all levels are the essence of an organisation and their full involvement enables their abilities to be used for the organisation's benefits". Therefore organisations must encourage the involvement of people at all levels Organisations must help people to develop and use their abilities. Cotton (1993) argued that most of the studies found that employees' participation had little consistent effect on productivity; however some 60% of those studies did find a positive relationship between employee's participation in decision-making and job satisfaction. Another key to the effective employee participation in decision-making is the existence of supportive organisational culture. To be successful however employee participation in decision-making must be more than just some systematic approach, it must become part of the organisation's culture by being part of the management's philosophy (Werther 1981).

As part of the process of attempting to in still a quality culture, management may introduce TQM teams and seek to involve workers more in decision-making. TQM teams are meant to empower public service workers nearest to the customer and invert the traditional hierarchy of organisational power and control, when introducing TQM teams, management may allocate considerable financial and time resources training team members in statistical analysis, (Brown, 1993). However, diminish where workers are expected to participate in process improvement team activities on top of their regular work tasks Morgan and Murgatroyd (1994), Ludwig-Baker (1999) stated that the effective decisions and actions are based on the logical and intuitive analysis of data and information. Scrap, rework, returns and customer information are all-important

for decision making. This principle leads the decision makers to approach the decision in a different ways; decide what decision want to be made, determine what facts to be needed to make the decision and determine how much facts will be obtained and what methods to be used to get them (Hoyle1994). Organisations perform better when their decisions are based on facts. Therefore Organisations must base decisions on the analysis of factual information and data.

Employee satisfaction should be one of a firm's key performance measures, and employee satisfaction is defined as the degree to which employees like their jobs According to Cherrington (1995), the best way to measure employee satisfaction is to either interview employees or asks them to complete a questionnaire. A questionnaire survey is the most popular method of measuring employee satisfaction since it is relatively short and can be administered to large numbers of employees simultaneously; interviews are more expensive and time consuming to conduct.

The people within an organisation are communicated to know and understand the relevance and importance of their activities. Also, they should know how these contribute to organisation objectives. Juran (1988, p.30) stated that "...workers have knowledge in depth with respect to needs for quality. That knowledge is derived from extensive "residence" in the workplace and from the repetitive performance of numerous cycles of processing in that workplace. As a consequence of all that residence and processing, they develop expertise in such matters as condition of facilities, environmental variations in the workplace, support provided (or denied) by service departments, variations in inputs to the process, and consistency of management actions. Such expertise is a useful input to many planning projects.

For some projects the input is indispensable. All of this means that the workforce should be regarded as internal customers who can tell us a great deal about quality needs". Crosby (1999) stated that his experience showed that the managers did not seem to understand that people were their primary asset; competitors all around the world could purchase the same equipment and materials; the only advantage a company could have was its work force.

For attaining employee involvement, Ishikawa (1985:112) suggested that "Top and middle managers must be bold enough to delegate as much authority as possible. That is the way to establish respect for humanity as your management philosophy. It is a management system in which all employees participate, from the top down and from the bottom up, and humanity is fully respected". Top management participation is crucial to a firm's quality improvement efforts; it obviously helps in spreading quality consciousness throughout a firm (Dale 1999).

3.1.5 TQM and continuous improvement

Round and Chi (1985) in the implementation of TQM on construction projects, one important step is to institute continuous improvement. Continuous improvement would yield excellence in design, ensure communication in contracts and create a teamwork spirit in construction. The following are the keys to continuous improvement in the construction process:

- Learn to work smoothly in teams, i.e. respect the principle of internal supplier to internal customer chains.
- Be proactive to sense reasonable future change and be prepared. Do not wait until you are pressured into change or to act.
- Aim process improvement at the singular goal of meeting clients' expectations.
- Set benchmark at above average incremental process improvement to systems or subsystems and implement/monitor programmes.
- Look for root causes when diagnosing the system malfunction or project process bottlenecks.
- Recognize the integrated and interdependent nature of project system and its parts.

Low and Ling Pan (2004) pointed out that the existing literature on TQM argues that without top management commitment and support, the organisation cannot achieve continuous improvement process of a TQM. Most businesses agree that customer service quality provided to their target customers affect global business performance and becomes a crucial business strategy (Hung *et.al.*

2003). In the absence of objective measures, businesses must rely on consumers' perceptions of service quality to identify their strengths/weaknesses, and design appropriate improvement strategies.

Continual improvement of the organisation's overall performance should be a permanent objective of the organisation. It is a permanent goal for any organisation that wishes to stay in business (Hele 2003). Organisations are more efficient and effective when they continually try to improve. Therefore Organisations must make a permanent commitment to continually improve their overall performance. Continual improvement is a set of activities that an organisation routinely carries out in order to enhance its ability to meet requirements. Continual improvement can be achieved by carrying out internal audits, performing management reviews, analysing data, and implementing corrective and preventive actions. Therefore, customer satisfaction must be translated into a number of measurable models that evaluate customer satisfaction and organisational operating efficiency.

Continual improvement would yield excellence in design, ensure communication in contracts and create teamwork spirit (Hele 2003). Continuous improvement is necessary to achieve quality according to Richardson (1997), McNair and Leibfried (1992), Kanji (1995) and Hoevemeyer (1993). Heath (1989) cited that continual improvement should be an objective as it is a necessary objective of TQM implementation. A construction organisation may outperform the competition by being able to anticipate and respond quickly to customers' demands with new ideas and technologies and to produce constructed facilities that satisfy or exceed customers' expectations.

3.1.6 TQM and leadership

In the researcher's experience, it is a part of Libyan culture that some of the middle managers and supervisors would prefer not to write their opinions regarding the leadership of their organisation. Influential obstacles to change, potential barriers to change should be identified by managers. 75% of Libya's population is under the age of 35 and provides the skills for the country's economic future.

Whilst many Libyans are supported by the government to seek higher educational qualifications and training overseas, there is a growing demand for international training providers to introduce their expertise to this important market. This is reinforced by the government's recent announcement for the release of 400,000 government employees backed by generous incentives in order to stimulate the private sector. This alone will create huge opportunities in the area of education and training and the ongoing development of human resources. (PROJEX LIBYA 2006). Leaders should establish the unity and purpose for the internal environment of the organisations. Leaders should make the employees in an organisation want to work.

Leadership has been a key topic of research and practical interest for a number of decades. Research on leadership has taken a number of different perspectives such as the trait approach, the behavioural approach, the contingency approach, and the charismatic approach (Yukl 2002). Despite their implications for the management of quality in organisations, these theories have not explicitly focused on quality and on the role of leaders as managers of quality. Much of the theory and research frameworks developed focus on leadership as a key managerial role. Ludwig-Baker (1999) highlighted that the hallmarks of good leaders are; communications, vision, change, respect for all individuals. Hoyle (1994) stated that the leadership must create and maintain the internal environment in the organisations to make people become fully involved in achieving the organisations objectives.

In the TQM the leadership principle is reflected through the requirements addressing; internal communication, creating an effective work environment, planning and the setting of objectives and policies. Organisations rely on leaders (Crosby 1979) thus the concept of leadership in this study can be defined as the ability of top management to lead the firm in continuously pursuing long-term overall business success. This is exemplified by top management participation, top management encouragement, employee empowerment, top management learning, top management commitment to employee education and training, and top management pursuit of product quality and long-term business success.

Therefore Leaders must establish a unity of purpose and set the direction the organisation should take. Leaders must create an environment that encourages people to achieve the organisation's objectives. According to the action centred leadership, originally developed by Adair (1983) for leadership training at Sandhurst Military Academy (see figure 4) there should be a focus on three basic project needs.



Figure 4 – Action centred leadership model

(Source; Adair, 1983)

These needs are presented as intersecting circles to indicate the separate needs and mutually overlapping needs.

Individual's needs - The Individual's needs should be considered first, because if the Individual's basic needs are not being satisfied then that person is unlikely to be able to contribute effectively to the team or task.

Team's needs - The team's needs to be effective must work together and interact as a team under a single point of responsibility, the team leader.

Task's needs - The task's needs for both Individual's needs and Team's needs the task's needs are to deliver the project's objectives , scope, time, cost, and quality through an effective planning and control system that includes integrating the project process, communication, organisation structures and risk management by effectively solve problems and be committed to their decisions.

Therefore to achieve maximum output from the workforce the managers must address both ability (The personal qualities and competency a person brings to

the job) and commitment e.g. an effective way to achieve commitment is to make the person aware of the cost of any delay to the project. Burke (2007) The Top manager's challenge as chairperson is to encourage interactive discussion and encourage full participation. Moreover Adair (1983, p.189) stated that leadership cannot really be taught, it can only be learnt. Furthermore (Juran (1989),) said to implement TQM, they must first know leadership. Learning TQM is an important step toward implementing it. Top managers should be modest enough to learn from their employees and value the ability of their creativity.

Management commitment is essential in TQM implementation and practice, as without management commitment no or little improvement can be attained. Without management's commitment, the objectives of the above three principles would hardly be attained. Dale *et.al.*, (1994) argued, "Without the total commitment of the chief executive officer (CEO) and his or her immediate executives and other senior managers nothing much will happen, and anything that does will not be permanent. Top management commitment has been identified as one of the major determinants of successful TQM implementation. According to Juran (1974) most of the problems associated with quality are attributed to management. This indicates that successful quality management is highly dependent on the levels of top management commitment. They have to take charge personally, provide direction and exercise forceful leadership. Dale, *et.al* (1997) added that the senior managers have to encourage the business, which not only requires their personal commitment but also a significant investment of time. These statements clearly suggests that management has to take the leading role in all aspects related to quality management and improvement; it also has to devote enough time to these issues and show visible commitment to them by their actions. Peters (1987) stated that commitment is about attitudes; but the attitude of emotional commitment must also be translated into practical actions, which show up on the calendar each day.

3.1.7 Education and training to achieve TQM

Employees can generate innovative ideas for solving working problems. Training provides a forum for communication of new organisational strategy,

values, and ways of performing work. Employees' commitment may be enhanced. Deming (1986) stressed the importance of education and training for continual updating and improvement, identifying one source of human motivation at work as intrinsic motivation; more generally, growing, learning, and developing one's self. Employees inherently want to learn and develop. In Libya, despite the progress made in the education and training programmes and the money spent on its development, its inefficiency remains crucial, and this due to the corruption in the management levels, as well as the lack of qualified teachers and this due to a very low wages and salaries which can be considered as a basic (Sun 2000). According to David and Murat (1997) construction industry professionals are aware of the importance of quality training. Engineering, architecture and construction management students who eventually become the industry's future leaders must be instructed in the basics of quality management. Education and training in TQM theory and practice at all levels (management as well as operative levels) and in all phases (design, construction, and operation phases) are essential to enhance competitiveness.

The effectiveness of the Deming management method arises from leadership efforts toward the simultaneous creation of a cooperative and learning organisation. If TQM implementation is to be successful, leadership must be up to the challenges. It must also be regarded as an organisational phenomenon consisting of a set of strategies used by the leaders to implement TQM.

3.1.8 Reasons for maintaining TQM applications

TQM has gained in the Libyan organisation. However, acceptance by construction industry is limited of percentages when compared with statistics from construction organisations in Europe, Asia, USA, and Oceania. (See figure 5)

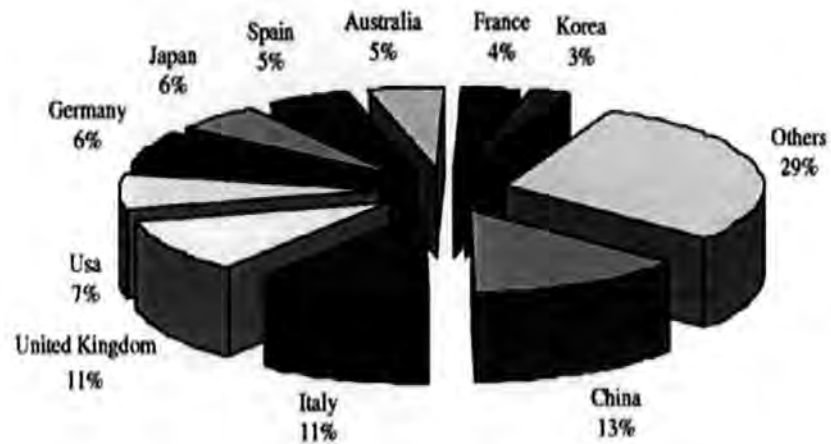


Figure 5 Statistics from construction organisations in Europe, Asia, USA, and Oceania.

(Source: ISO 2003)

A good way of viewing ISO is that the emphasis in the ISO registration is on the management of process quality. This is not meant to minimize the role of ISO in a TQM system. Sun (2000) said The ISO standards provide an excellent beginning point for a firm starting a TQM program.

The TQM introduces some aspects in agreement such as customer orientation, resource management and Continuous Improvement (CI) (Awana and Bhatti, 2003). In similarity, Amar and Zain (2002) cited that the ISO 9001:2000 standard is close to TQM system concepts, with a structured approach to progress beyond certification to the achievement of TQM. Clearly this information about Statistics from construction organisations in Europe, Asia, USA, and Oceania are relevant to initial idea to give that TQM is limited in Libyan company.

3.1.9 Quality management systems (QMS)

Quality management has been an important component of the overall organisational movement for the past twenty years (Lee *et.al.* 2003). A Quality Management System (QMS) is defined in many forms (Gryna 2001, Juran 1995) determined it as a system for formally managing and controlling the tasks and activities that must be in place in order to ensure that requirements are met consistently and in an effective and efficient manner. It defines the Quality environment within a business. Customers are becoming more sophisticated, better informed and their expectations are growing. For any business, the only

way to keep up is to offer a commitment to quality. Saunders and Preston (1995) said in fact any organisation; whatever their size or industry sector can give themselves a secure future by introducing a quality management system such as total quality management (TQM). David and Murat (1997) stated construction firms for a variety of reasons pursue total quality management (TQM) ideally, the main motivator for total quality should be the achievement of quality in a company's internal procedures in order to optimize resources and better satisfy customers' requirements. Many organisations are pursuing certification in order to satisfy specific requirements from one or more customers. (Arnold, 1994) stated this is true for local and international firms working in Asian markets, where TQM is increasingly becoming a mandatory requirement for bidding in public projects. Other firms take advantage of TQM as an effective marketing tool through an improved company reputation. The application of TQM in construction has its advocates and opponents. Supporters believe that TQM can be applied successfully in construction and can generate substantial benefits. It is believed that a construction company's operations can improve through the establishment of a quality system designed to standardize corporate procedures (Chung 1999). Lee and Quazi (2001) and Stebbing (1993) all mentioned that (QMS) is a key factor in gaining competitive advantage, understanding of the QMS practices of other countries is very important for decision makers in western cooperation.

Quality systems have gained attention of top managers and quality professionals worldwide, which in turn, has encouraged individuals to implement the quality improvement practice (Kanji, 1998). Any organisation embarking upon a TQM should use the available QMS as guidance documents. Also, Oakland (2000) stated that an appropriate TQM can make an organisation's objectives cited in the quality policy to be received. Hamali (1999) pointed out that QMS in a public sector organisation is not easy to implement through; lack of competition to push principles of QMS, lack of effective top management, the centralised government control that limits the flexibility and acceptance to change, the environmental differences of their

customers that make it difficult for public sector organisations to please or delight their clients.

3.2 TQM and the construction industry

David and Murat (1997) Stated that TQM concepts in construction have pulled the industry out of a crisis mode that existed for quite some time and the management philosophy of TQM directs all strategic and operational policies in which the company engages. The ability of management and employees to control their work processes, to recognise problems, traces their root causes and to implement effective remedies is the cornerstone of a continuous quality improvement program. Kanji and Wong (1998) stated that a cultural and behavioural shift in the mind-set of all participants in the construction process especially top or senior management is necessary if the construction industry is to improve its performance. A wide range of quality tools and techniques are available to companies, which provide a common language, a consistency of approach to continuous quality improvement. These tools range from simple techniques such as brainstorming to a more sophisticated option including statistical process control techniques. The most widely used techniques are listed below.

While the tools may appear to be little more than applied common-sense, they have been proven in many industries and together they form a powerful methodology by which individuals or team are able to continuously improve their work process. While data collection is the foundation on which a TQM program is built, it is important that each company selects those tools that work for it and avoids collecting data as an end in itself (Oakland, 1995). Within the construction industry, architects, quantity surveyors, engineers, contractors and various other specialists all have, in addition to their special technical skills, their own trade or professional customs and practices. These may have an effect on the building process either individually or collectively. Dreisek and Grubb (1995) gave some of the benefits to total quality management may also be inferred from its potential disadvantages and benefits in construction the application of these techniques has led to the development of TQM for

improving the broader overall performance within the company. As seen in the figure 6 below the benefits of TQM.

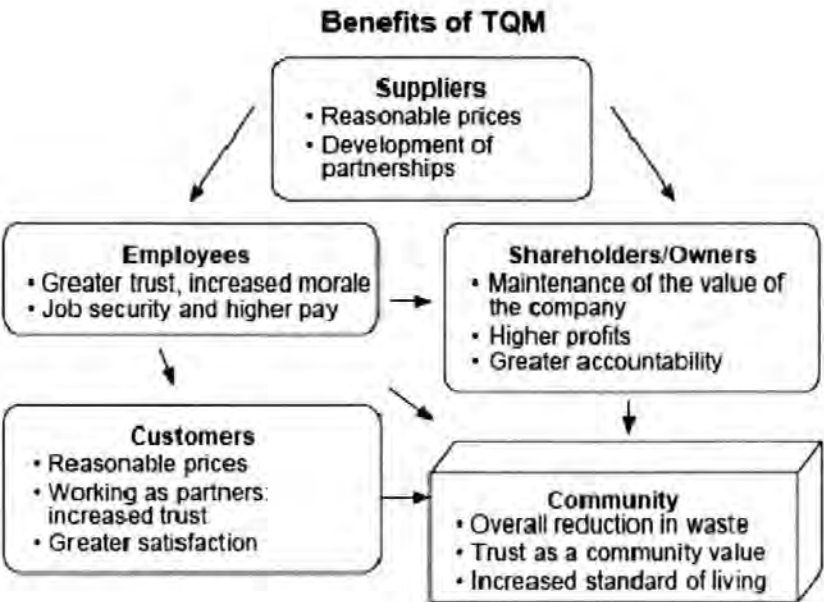


Figure 6 The benefits of TQM.

(Source: Dreasek and Grubb 1995)

3.2.1 The concept of quality in construction practice

Quality may mean different things to different people. Sun (2000) stated that some take it to represent the products and customers satisfaction, and others interpret it as compliance with requirements. Moreover, quality was defined as the totality of features and characteristics of a product or service that bear on its ability to stated and implied needs. For construction the needs must be defined by the client. The inclusion of services is pertinent to construction, where both designers and constructors supply services as well as the product (i.e. the completed work). Juran (1989) stated that although the need for quality has existed since the beginning of time, the ways and means of meeting this need for managing quality have changed dramatically. Wong and Fung (1999) stated the construction industry is being viewed as one with poor quality emphasis compared to other sectors like the manufacturing and service sectors. Moreover

they said total quality management (TQM) is increasingly being adopted by construction companies as an initiative to solve quality problems in the construction industry. In fact, a building is good quality if it will as intended for its design life. As a true quality of the building may not be revealed until many years after completion, the notion of quality can only be interpreted in terms of the design attributes. (Battikha and Russell, 1998), Deming (1986), and Worldwide, there are several Quality Awards such as the Deming Prize (1996) in Japan, the European Quality Award (1994) in Europe, and the Malcolm Baldrige National Quality Award (1999) in the United States of America. Each award model is based on a perceived model of TQM and provides a good understanding of the TQM philosophy, principles, and practices.

3.2.2 Defining quality on construction projects

Numerous expressions have been adopted to define quality in the construction industry. Crosby (1979) defined quality as "conformance to requirements". Juran's definition pointed to quality as "fitness for use" in terms of design, conformance, availability, safety, and field use. According to Hart (1994) quality has a three-fold meaning in construction, it means getting the job done on time; it means ensuring that the basic characteristics of the final project fall within the required specifications; it means getting the job done within budget. Kanji and Wong (1998) stated that the construction industry has numerous problems because of its complicated nature of operation. Moreover said industry is comprised of a multitude of occupations, professions and organisations. A quality construction project has to comprise all these dimensions. Actually, quality in construction is directly connected with conformance to specifications and fitness for use. According to Wong and Fung (1999), higher customer satisfaction, better project quality and higher market share often come with the adoption of TQM by such companies. These definitions are interdependent and the choice of one depends on the domain and the purpose of its use. In construction quality may be defined as "conformance to established requirements".

Laszlo (2000, P.1) cited that quality management (QM) is "the quality of management" which contains leadership, communication, team work and ability

to change and improve and pleasing the customer. It includes the ongoing search for opportunities to improve total quality management (TQM) is an overall concept that should be committed to by top management. According to Juran and Gryna (1993), quality management is the "process of establishing long-range quality goals and defining the approach to meeting those goals". However, construction companies are adopting TQM to improve their performance. In addition, there is much dissimilarity between manufacturing and construction, so TQM techniques must be adapted for the construction industry. Understanding the customer's requirements is essential in ensuring customer satisfaction, and the demand for the construction product must be viewed in relation to the intended use of the facility.

3.2.3 Key Issues for the UK construction industry

The UK Construction Industry output in 1998 was estimated at £58 billion, equivalent to approximately 10% of the UK GDP (Office of National Statistics, 2001, 2002). The majority of this was from the private sector and a high proportion was from repair and maintenance work as opposed to new infrastructure (Flanagan *et.al* 1998). Employment in the industry, reported at about 1.4 million in 1999, is predominantly male (over 90%) with a clear trend towards older works (Court and Moralee 1995, Gale 1992, DETR 2000). Finding and retaining new recruits is a problem for the industry (Agapiou, *et.al* 1995). A shortage of key trade and professional skills, despite rising workloads between the mid-1990s and early 2000s, posed significant questions as to the industry's capacity to continue increasing its output (DTL, 2002). This section is as a lesson to the total quality management in Libya, which is relevant to the researcher.

3.2.4 Lessons from the UK

The Latham Review - Flanagan *et.al.* (1998) examined nine major reports, ranging from the 1944 Simon Report to the 1994 Latham Report. All the reports have reviewed the practices and performance of the industry and some positive action has been taken, Including:

- The establishment of Construction Industry Board, as a strategic forum for debate within the industry.
- Legislation on a fair payment and adjudication put in place through the Housing grants, Construction and Regeneration Act 1996 (Arden, 1996).
- An increased use of partnering and framework agreements (targeting fragmentation) in place of contract-based procurement and project management.
- An increasing interest in successful tools and methods proven in other industries, such as team working, TQM, JIT and benchmarking.

In addition, following the Latham recommendation for a co-operation-based culture in UK construction (Latham, 1994:39), there has been more research addressing relevant issues and more government-funded research programmes encouraging such research initiatives (e.g. Engineering and Physical Sciences Research Council (EPSRC) Innovative Manufacturing initiatives, Construction as a Manufacturing Process). For instance research project have focused on the improvement of teamwork in construction; overcoming barriers to communication; the enhancement of understanding among different parties involved in the construction process (e.g. building designer and site worker). Also according to Low and Goh, 1996 stated that total quality management (TQM) philosophy for the construction industry, this is to be accomplished by:

- Explaining the rationale for TQM in construction;
- Discussing the factors which affect construction quality;
- Proposing a framework for implementing TQM in the construction industry;
- Proposing a framework for implementing TQM at the project levels in construction.

Rethinking Construction - Rethinking Construction report produced by the government-commissioned construction task force, headed by Sir John Egan (Egan, 1998). According to this report;

"Much of construction does not yet recognise that its people are its greatest asset. Too much talent is simply wasted, particularly through failure to recognise the significant contribution that suppliers can make to innovation... Difficulties are posed by the fragmented structure of the industry, but construction cannot afford not to get the best from the people who create value for clients and profit 5s (five Key Drivers to Change) for companies." (Egan 1998:17). Overall, Sir John Egan recognised that "the industry can and indeed must do better" and established that through the application of best practices.

The five Key Drivers to Change, as shown in figure 4 signified the following:

- **Committed Leadership:** Management believing in and being totally committed to driving forward an agenda for improvement, cultural and operational changes throughout the whole of the organisation.
- **A focus on the customer:** the best companies provide precisely what the customer needs, when the customer needs it and at a price that reflects the product's value to the customer.
- **Integrate the process and the team around the product:** the most successful business does not fragment their operations –the work back from the customer. The process and the production and the value it delivers to the customer.
- **A quality driven agenda:** Quality means the total package- not only zero defects but right first time, exceeding customer expectations, delivery on time and to budget, innovating for the benefit of the client and stripping out waste in all its forms.
- **Commitment to people:** This means not only decent site conditions, fair wages. it means a commitment to training and development of managers and supervisors,

Egan (2002) added social and environmental considerations and the range and diversity of initiatives are frequently referred to as the post-Egan agenda (Figure 7). These lessons highlighted by Latham and Egan because the principles they uncovered have been widely accepted by the international community and reflect problems of a generic nature in construction industries of all countries,

e.g. Raymond and Hedley (2007). Reports from Latham (1994) and Egan (1998) in the UK is what has come to be known as "continuous improvement".

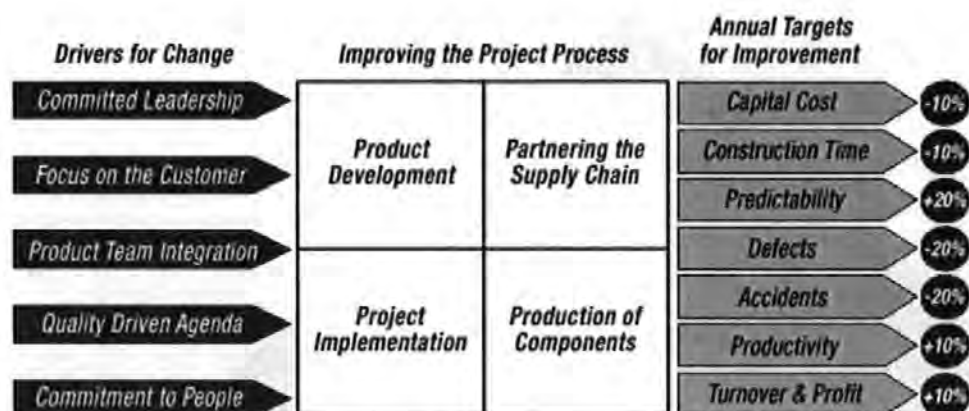


Figure 7 Drivers for change in the construction industry

(Source: The Egan Report 1998)

The study has lessons for knowledge transfer in industry, for the gap between conceptualising improvement in academe, both in advocacy and criticism of continuous improvement. Moreover, Nancy and David (2004) stated that the reports from Latham (1994) and Egan (1998) give a better understanding of us to learn together and aim for a more positive future experience. Finally; this lesson provides a unique bridge between industry and government. And it would appear that the quality of construction work is dependent to a large extent on the attitudes of the contractors and consultants. It is therefore necessary to adopt a total quality approach in all construction projects in order to eliminate all factors which have an adverse effect on the quality of construction works.

3.3 Barriers to TQM implementation

Libya is at the heart of North Africa, the fastest growing telecoms market in the Middle East and North Africa (MENA) region which is set to reach US\$13.4 billion in 2008, with the Mahgreb area showing the most significant growth. (PROJEX LIBYA. 2006). Many of the major issues in construction projects require effective intervention by individuals, groups and organisations. The fundamental challenge is to enhance communication among individuals, groups

and organisations so that obstacles in the way of improving interpersonal relations may be removed. Some behaviour science concepts are helpful in overcoming communication difficulties that block cooperation and coordination. The key element of this study was to identify and analyse the barriers affecting TQM implementation in Libyan construction industry public sector organisations. The implementation of a TQM is faced with many different barriers in many organisations overall the world. Dory and Schier (2002), point out that the quality philosophy requires that employees and managers within and across departments in the organisation work together to identify and resolve quality problems. There is a shortage of the topic of barriers affecting the implementation of TQM in previous research e.g. Ishikawa (1985), Milakovich (1990), Vouzas (1997), Morgan and Murgatroyd (1997).

3.3.1 Criticisms of TQM

TQM critics can make significant contributions to the quality of a TQM program and the achievement of its goals. The reveals that there is no a precise definition of the term "quality", as it means different things to different people. Moreover, Hackman and Wagerman (1995) give two reasons why TQM can go wrong. First, the changes may be so ambitious and involve such fundamental alterations of the social system, which is relevant to this research; second, the changes may be more like window dressing than real changes. Quality management concepts have evolved over time; therefore, TQM could be regarded as an extension of the previous quality management concepts and methods.

The survey of the literature further reveals that the Deming (1986), Juran (1974, 1986, 1988 and 1989), Crosby (1979, 1992 and 1996), Egan (1998), Flanagan *et.al* (1998), Haigh and Morris (1993 and 1995), Harrington (1999), Feigenbaum (1982 and 1993) and Hellard (1993) made a great contribution to the development of TQM. Each of these writers offered to management a number of methods and management techniques for managing quality and improving organisational processes, even though they did not agree on a specific model or approach to transfer their methods and approaches into practice. Moreover, the

authors above have demonstrated that there is value in raising constructive criticism about the paths taken, or not taken, in the TQM process.

Listening closely to employees who are less than enthusiastic about TQM is important. Santos and Esconciono (2002) mention that the TQM is intended to overcome some of the disadvantages and critics faced by the concepts. In every stage of TQM there was a requirement to establish and maintain documented procedures to control some aspects of an organisation's operations and TQM is a philosophy which applies equally to all parts of the organisation, moreover all employees assume responsibility for the quality of their work. This led to the perception that TQM built a bureaucracy of procedures, records and forms with very little effect on quality (Winch, *et.al.* 1998). Despite these criticisms, TQM played an important role in trading between different countries. The survey of the literature shows that there are a number of features and characteristics (knowledge and understanding of TQM, internal and external customer satisfaction, employee participation, team work, leadership, continuous improvement, and management commitment). Finally critics of TQM have not, and should not, limit their critiques to the theory of TQM, but the assessment of how, during implementation, that TQM takes a long time to implement as it requires major organisational changes in culture and employee mindset.

3.3.2 Organisational culture barriers

Culture is defined by Oakland (2000, p.22) as "the beliefs that pervade the organisation about how business should be conducted and how employees should be treated and should behave". The culture within the organisation contains behaviours based on people interactions, norms resulting from working groups, dominant values adopted by the organisation, rules and the climate in the organisation (Oakland, 2000). Maull *et.al* (2001) stated that culture includes knowledge, belief, art, morals, law, customs and habits and capabilities acquired by employees in the organisation. Culture is the adhesive material that holds the organisation together. Furthermore, Maull *et.al* (2001) quoted Vanisina (1990) who argues that the successful implementation of a TQM

requires an assessment of the organisational culture and the implementation of an integrated process for change in organisational behaviour.

A review of TQM literature (Kumar, 2006) shows that TQM culture can be considered to be one which uses team, promotes pride in workmanship, drives out fear, allows participative management, promotes leadership in place of supervision and promotes long term orientation among the members of the organisation. Companies in the UK are beginning to understanding this "culture barriers" and deal with it. For many years, the Japanese have been held up as having a culture of efficiency, hard work and achievement. However, as Japanese business set up in the UK, we see that where the UK culture is mixed with this Japanese working style.

The countries such as Hong Kong, Mexico and China had more inspection driven quality management (Hofstede, 1980, 1991) .The emerging economies of Eastern and Central Europe with a tradition of high power distance stand to exercise quality control smoothly. Interestingly, some countries such as New Zealand have demonstrated big levels of quality control with low power distance. Hofstede defines 'culture' as the collective programming of the mind that distinguishes the members of one group or category of people from another. In this definition, the 'mind' stands for thinking, feeling, and acting, with consequences for beliefs, attitudes, and skills.

Hofstede (1991.p.51) defined individualism versus collectivism in broad terms:

"Individualism pertains to societies in which the ties between individuals are loose; everyone is expected to look after himself or herself and his or her immediate family. Collectivism pertains to societies in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty".

The relevant three (Hofstede, 1980, 1991 and 2001) dimensions are: Power Distance, Uncertainty Avoidance, Individualism as opposed to Collectivism, and Masculinity as opposed to Femininity.

- Power distance is defined as the extent to which the members of a society accept that power in institutions and organisations is distributed unequally.
- Uncertainty avoidance has to do with the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity, leading them to support beliefs that promise certainty and to maintain institutions that protect conformity.
- Individualism stands for a preference for a loosely knit social framework in which individuals are supposed to take care of themselves and their immediate families only, as opposed to collectivism, which stands for a preference for a tightly knit social framework in which individuals can expect their relatives, clan, or other in-group to look after them, in exchange for unquestioning loyalty.
- Masculinity stands for a society in which social gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life.
- Femininity stands for a society in which social gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life.

Additional studies have shown Hofstede's cultural measure to be generalizable across multiple contexts and societies (e.g., Furrer, Liu, and Sudharshan, 2000; Mattila, 1999). Moreover, Clark (1990) argued that Hofstede's measure might account for many cultural differences among individuals, suggesting that such measure might also prove useful for assessing ethnic differences in perceived service quality in forest recreation settings. Al-Khalifa and Aspinwall (2000) added an organisation's culture provides the basis for forming and modifying behaviours, attitudes, and values deemed very important to the power structure of the organisation. The culture is often a barrier to change in TQM programs. Culture change is necessary to create the changes in attitudes and behaviours to enhanced desired behaviours. However, the greatest challenge with respect to removing the barriers to the effectiveness of TQM is the managing of cultural

change in adverse economic and social environments (Claver, *et.al.* 2001). Also, Dale (1999) added that the organisational culture barriers are the most important barriers to overcome to make an organisation successful in implementing TQM (Farid and Wahba 2004). Every culture has assumptions about how people should relate to each other; the culture of any organisation is affected by the culture of a society. For example in studies of North America managers, efficiency, high productivity, leadership and individuality are popular, in studies of Japanese managers, efficiency, high productivity and leadership are also popular. It is important that those employed in an organisation should try to understand the culture they share. And the group is always more important than the individual. Managers in general, and personal managers in particular, have to understand the text to which culture can be changes and how the change can be made, and we have to understand that the culture need time to adapt with it (Quazi *et.al* 1998).

3.3.3 Lack of Information and communication

In very large projects, professional behaviour scientists may be necessary in diagnosing the problems and advising the personnel working on the project (Samson 1997). The power of the organisation should be used judiciously in resolving conflicts. Communication defined in Goetsch and Davis (2000, p.307) as "the transfer of a message (information, idea, emotion, intent and feeling) that is both received and understood". Likewise, Daft (1997) defined organisational communication as "the process by which information is exchanged and understood by two or more people, usually with the intent to motivate or influence behaviour". Furthermore, Balzarova *et.al* (2003) quoted Thiagrajan *et.al* (1997) who highlighted that effective communication involves maintaining enthusiasm, employees' full involvement, understanding roles and responsibilities in processes and enhance personnel capabilities. Another view, given by Macedo-Soares and Lucas (1996) , who quoted Schall (1983) who believed that culture can be studied by looking at the communication rules of the organisation. Fuentes *et.al* (2000) cited that lack of information and communication routes where this necessary information could flow is a barrier to implement TQM in Spanish organisations. Furthermore, Samson (1997)

pointed out that lack of sharing information between management and shop floor employees to close the loop between improvement actions and their sequences is a barrier to implement TQM in Australia and New Zealand. Najmi and Kehoe (2000) cited Laza and Wheaton (1990), Boyett *et.al.* (1992), Brown (1993), Katz (1993), Goodman *et.al.* (1994), Zangwill (1994), Dale and Cooper (1994) and Tatikonda and Tatikonda (1996) who all found that a lack of integration between quality information system and existing management information system is a major barrier for TQM implementation.

3.3.4 Lack of customer satisfaction

The significance of customer satisfaction and its use for evaluating the quality from the customer's perspective, have been emphasised by many authors all construction (Hellard 1993, Torbica and Stroh 2001, Maloney 2002, Yasamis *et.al* 2002, Fewing 2005, Hofstede 1991 and 2001). This study examines customer satisfaction in construction as perceived by two customer groups: public and private customers. Quazi *et.al* (2002) and Fuentes *et.al* (2000), lack of commitment to satisfy customers, lack of integration of customer satisfaction in a firm's goals, vision and knowledge of customer needs and expectations, lack of cooperation from customers.

Also, lack of usage of customer feedback in new product design, monitoring customer satisfaction, responsiveness to customer complaints and levels of interaction with customer are big problems to implement TQM standards. The absence of the customer's voice and lack of alternatives for the customer to accept or not are barriers impeding TQM implementation in some Arabic country in the public sector organisation (Al-Momani 2000). Customer satisfaction is one of the key elements in total quality management (TQM), an approach that emphasises overall satisfaction through the continuous improvement of product (Milakovich 1990). Construction companies are adopting TQM to improve their performance. Measurement of the customer satisfaction is an important factor in the determination of the effectiveness and implementation of the TQM. Regarding customer satisfaction requirements TQM, top management should determine customer needs and expectations and change them to requirements. Communication of the importance of meeting

customer requirements throughout the organisation and the awareness of customer requirements must be further promoted by the management representative (Milakovich 1990). The customer focus principle is reflected through the requirements addressing the communication with the customer and management commitment, Vouzas and Gotzamani (2004) quoted Conti (1999) who identifies that customer satisfaction is a key requirement for verifying the effectiveness of the TQM.

3.3.5 Organisational culture and its change

Numerous studies above report the most frequent reason given for the failure of planned organisational change was due to a neglect of the organisational culture. Up to 75 percent of re-engineering, total quality management, strategic planning, technology adoption and downsizing efforts have failed or created problems affecting the survival of the organisation (Cameron and Quinn, 1999). To implement the TQM effectively in any organisation, an investigation and assessment of the existing organisational culture and management approach appeared a very important factor and should be taken in consideration in any organisation. The organisational culture is how an organisation's employees behave with the change of an existing management system. Ghobadian and Gallear (1997) cited that there are six barriers that can influence the culture of an organisation as:

- Education and training.
- Improvement of communication programs.
- Top management behaviour.
- Frequent revision of procedures and policies.
- Employee involvement.
- Modification of evaluation and reward system.

The resistance to change happened by middle managers, first line managers and employees when new tasks and responsibilities are given to them, For example, resistance to change with its different forms from management, or employees, is a common aspect that emerged with any new change process in

the organisation. The management should work to investigate the existing organisational culture, to implement the new process effectively. Berry (1990) (in Figure 8 below) represents the levels of intervention required for the intended change.

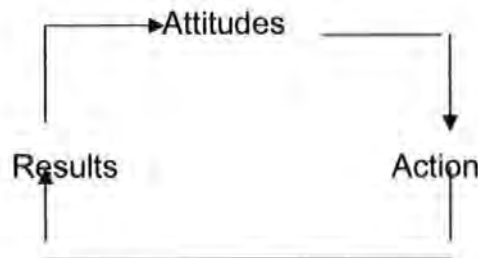


Figure 8 Levels of Intervention

(Source: Berry 1990:30)

However Riley and Brown (2001) stated the main findings are that the culture existing in construction has significant differences to that found within the manufacturing industries. It will not be possible to transfer management tools from one industrial sector to the other without substantial redesign. The culture within construction was found to be a "project culture" in comparison to manufacturing, which was found to be a "company culture." Riley and Brown (2001) Also show

"The Construction Industry would benefit significantly from the study and adoption of best practices from manufacturing and other industries. Elements are identified which could lead to early advantage: they include better supply chain management and considerable improvements in culture and organisation".

Moreover human resource management means managing people within the employer-employee relationship. It involves the productive use of people in achieving the organisation's strategic business objectives and the satisfaction of individual employee needs. Ghobadian and Gallear (1997) stated barriers can influence the culture of an organisation such as education and training of employees, participation programmes of employees, enhanced communication programmes, revision of procedures and policies, modification of reward system and behaviour of top management. To successfully implement a TQM, cultural

change is required to replace the traditional methods and ideas with newer ideas and beliefs in the way work should be done.

Low and Alfelor (2000, p.134) quoted Low (1998) who stated that there are two basic approaches to implementing TQM, which meets the requirements of TQM, technical and non-technical (behavioural) approaches. The technical elements of TQM are always the most visible quality management components, the improper identification and disregard for the non-technical attributes such as an organisational politics, leadership styles, socio-political conflicts, change management, etc, as figure cross cultural influences on quality department below have been regarded as the root cause of an organisation's failure to fulfil its quality objective. Cross- cultural influences can also affect the work of quality departments in construction projects.

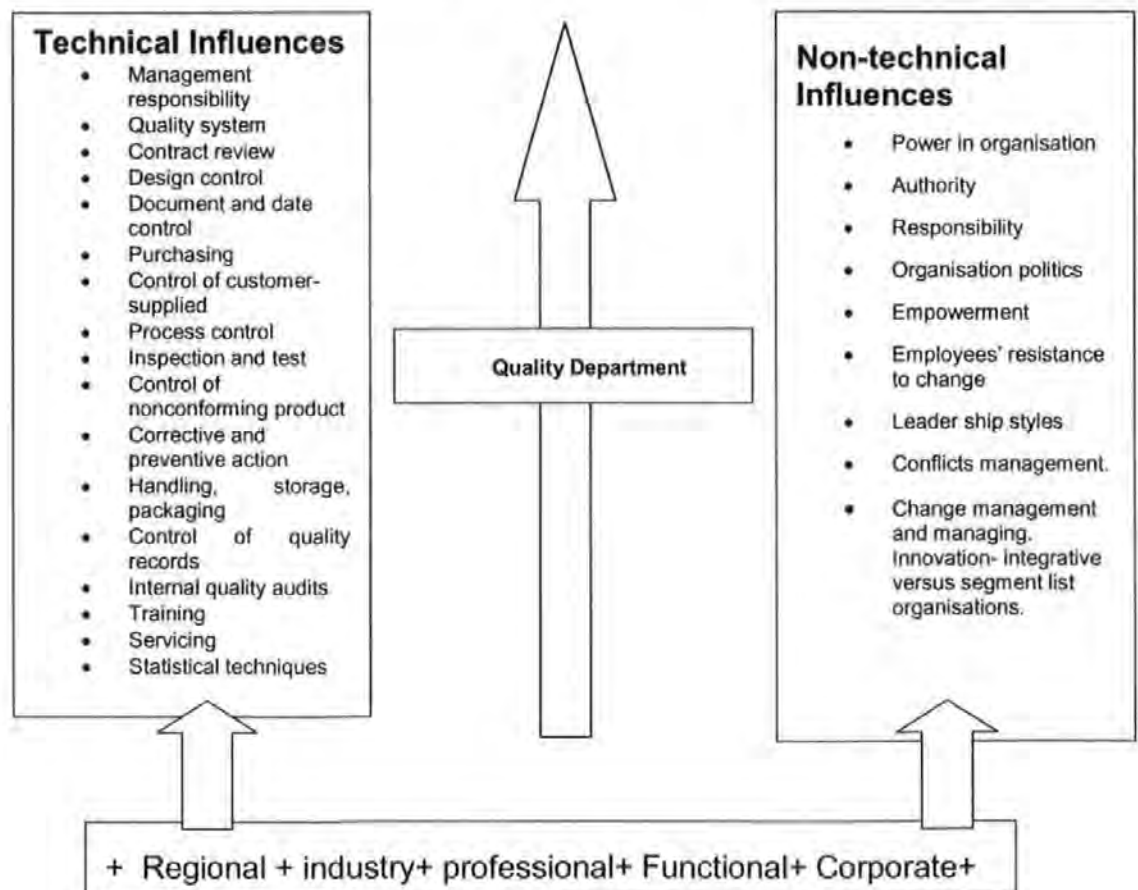


Figure 9 Cross- cultural influences on quality department

(Source: Low 1998)

Tata and Prasad (1998), outlined that organisations with culture are characterised by behaviour matches slogans, customer input is actively sought and used to continually improve quality, employees are both involved and empowered, work is done with teams, top management are committed and involved, sufficient resources are made available for the continual improvement, of quality, education and training are provided to ensure that employees at all levels have the knowledge and skills needed to continuously improve quality, reward and promotion system are based on contributions to quality continual improvement, fellow employees are viewed as internal customers and suppliers are treated as partners. Management should recognise the importance of culture and its influence in transplanting what an employee worked in a different cultural set up without reviewing its compatibility or incompatibility with different cultures; for example, work ethics may differ in different cultures (Triandis, 1994).

Triandis (2002b) cited that top management in an organisation makes a mistake when it implements organisational changes through radical restructuring by ignoring the effort required to change skills and behaviours, resulting in surprise when the exercises need to be repeated a few years later. Thus there are two cultural requirements for successful TQM implementation: TQM prefers collectivistic culture and empowering and participative style of management. However, collectivistic society tends to be more hierarchical i.e. high on power distance that does not support empowering and participative style of management and thus is not conducive for TQM implementation. The importance of an appropriate quality culture is recognised by most prominent quality experts, e.g. Deming (1986), Juran (1974, 1986, 1988 and 1989) and Crosby (1979, 1992 and 1996). Their works identify a number of cultural elements that must undergo change in order that a continuous quality improvement philosophy can be sustained. So, culture is the key factor underpinning success interims of developing the necessary commitment to any form of change. Another cultural dimension that mediates positively in TQM implementation is collectivism (Kumar 2006). The barriers are forcing any organisation to review and change four areas, culture, mission, structure and

process (Kamensky 1996). The need for change has driven initiatives in the public sector as pressure to improve performance has increased.

Bureaucratic, highly controlled work environment can give employees 'willingness of participate in their organisation's success. Maximise their contribution of the success of their organisations (Dobbs, 1993). The implementation of a total quality management (TQM) culture, with its implicit orientation towards the customer, is a complex matter and requires a long-term approach. Consequently, the firms that try to change from a bureaucratic culture to one oriented towards quality will have to design an appropriate strategy in order to succeed. (Claver *et.al* 2001) TQM had the most effect on process management, focus on customers and leadership and management and less effect on focus on suppliers, performance results, strategic planning and focus on material resources. Human resource problems, performance appraisal and strategic problems were the most important obstacles to TQM success respectively.

Brown (1995) suggests that organisational culture can be a powerful tool for improving performance and the key to effective leadership and organisational development. However, it is important that effective leadership and workable organisation design and development programmers must be based on sensitivity to, and understanding of culture. Therefore, understanding the cultural environment is vital to TQM implementation and by extension to the success of the prospective change. But there is the fear that the focus on procedures will develop new quality bureaucracies (Vouzas and Gotzamani, 2004). Holt (1998) indicated a culture high in power distance such as Japanese and Chinese cultures, most their people at the lower levels would accept their subordinate status, and respect formal hierarchical authority. These people seldom violate chains of command or openly question decisions by their superiors. On the other hand, people who live in a low hierarchical society such as Americans and Canadians have less power distance between each levels. In an American company, higher managers normally will be more willing to share their authorities to subordinates in decision making, and to leave certain latitude for disagreement (Holt, 1998, p. 347). American cultures look up to personal

achievement, innovation, autonomy, and individual heroes. The individual achievement is highly valued, and any individual with a great ability will gain the best profit in a company. Being progressive and creative will be appreciated by this culture. In contrast, Chinese cultures in Hong Kong would emphasize more on group

Sanderson (1992) quoted Passmore (1990) who defines resistance to change as "human reaction. Resistance may come of interest, misunderstanding, and different assessment of the need or desirability of the change and in some cases due to low tolerance for change in the individual". It is what employees do, when they try to change organisational culture. Resistance to change is a quality barrier to effective TQM implementation and maintenance in Singapore organisations (Low and Ling Pan, 2004) The resistance to change happened by middle managers when they are feeling to lose influence over decision-making and employees in general when new tasks and responsibilities are given to them. Another insight is given by Lipovatz *et.al* (1999) that change of mentality, the avoidance of new tasks and responsibilities and the mistrust are causing resistance to change as a barrier in TQM implementation in Greek organisations.

3.3.6 Lack of motivation system and reward

Schonberger (1994) stated that total quality management removes the traditional career ladder because of the flat flexible structure within the organisation. Total quality management sets, on the other hand, the cross functional experience as a reward. According to Ellecker (1998) said the motivation system is divided into tangible and intangible techniques. Tangible means to show the levels of recognition for work contribution made, about behaviour that is valued by the top management and about the organisation's attitude to individual performance and achievement and the key element in the cycle is that of rewards in order to retain and motivate the staff, especially in work areas facing major competition. According to Storey (1992) stated the staff might presume that they would increase their wages owing to their increased liability, and that they would also receive a part of the financial gain thus created. Inconsistent reward systems and lack of recognition are other

obstacles in implementing TQM in many organisations; they increase the difficulty of consolidating the implementation of the new managerial approach and associated quality practices (Macedo-Soares and Lucas 1996, Ngai and Cheng 1997). In similarity, Low and Pan (2004) outlined that little recognition, respect and reward for a good job done to achieve quality performance is a barrier to effective ISO 9001:2000 implementation and maintenance in Singapore organisations.

3.4 Evaluating TQM approaches

It is important to get feedback on success, and should be given recognition as a result of his/her contribution to the improvement process in the encompassed many of the essential features of TQM that are demanded for improving the Total Quality Management of Organisations, and clearly these are relevant to initial idea are used in this research. Kanji and Asher (1993) suggested that the process of implementing TQM can be carried out in four stages as followings:

Identification and preparation: At this stage the organisation identifies and collects information about the prime areas where improvement will have most impact on performance, and it prepares the detailed basic work for the improvement of all the organisation's activities. The information collected at this stage should include the costs of quality such as the total cost of waste, error correction, failure, appraisal and prevention to identify the potential areas for improvement and to direct the improvement efforts towards the areas they are most needed. It also should include the opinions of customers, suppliers, managers and employees to get different views about the problems and the necessary actions that are required for tackling these problems. In general, the aim of collecting information is to ensure that management has correct and accurate information to make its decisions.

Management understanding and commitment: The aim at this stage is to make sure that management understands the objective and methodology of TQM and is prepared to adopt them all the time. To achieve this, it is necessary to educate management in the TQM approach so that it can take appropriate actions and demonstrate its total commitment and take the

leading role in the quality improvement process.

Scheme for improvement: At this stage it is necessary to develop a scheme for improvement, which should include appropriate training programmes for employees. The scheme should be developed after the realisation of some of the organisational critical aspects, such as customer-supplier relationships, meeting customer needs, main causes of the problems, best solutions to these problems, prevention of recurring problems, priorities for improving efficiency, etc.

Critical analysis: At this stage it is necessary to obtain information about successes. This will help to review the achievements and to understand the future requirements for continuous quality improvement, it also important that everyone gets feedback on success and given recognition as a result of his/her contribution to the improvement process.

However, Kanji (1996) suggested Deming's Plan-Do-Check-Act for *modelling* the four stages of implementation. To achieve this, it is necessary to educate management in the TQM approach so that it can take appropriate actions and demonstrate its total commitment and take the leading role in the quality improvement process. It is necessary to obtain information about successes. This will help to review the achievements and to understand the future requirements for continuous quality improvement. Also Sharp *et.al* (2003) who said lack of understanding the PDCA process was a barrier affecting successful implementation of the new standard in the north west of UK organisations.

Stoner (1989) stated that clearly, such a role distinction among leaders demands that each levels of management possess differing skills because the responsibility with which each is charged differs.

Deming considered quality responsibility is of the top management. Atkinson (1990) points out that 80 percent of TQM failures are mainly attributed to a lack of requisite commitment of top management. Such concerns raise doubts as to the suitability of Kanji's model for providing a practical link between TQM theory and the implementation requirements of Libyan construction industry company

(A&B).

At the Plan stage of the model, there is need for creating awareness for TQM amongst the personnel of an organisation. It is imperative to create awareness of TQM in an organisation before its introduction, as this will assist the personnel to understand the approach's concepts and principles. At this stage it is also imperative to communicate the need and intention for TQM implementation. The need and purpose for TQM implementation need to be communicated horizontally and vertically across all functional lines and areas of an organisation to win support for TQM implementation. Once these objectives have been attained, it is necessary to develop a case for action or a programme for improvement so that the goals and objectives of improvement can be manifested. To enable the personnel to take the corrective actions required for improving the case or programme, training programmes on TQM tools and techniques need to be undergone by the workforce.

At the Do stage, it is essential to establish and define process improvement teams. Management must lead the team. The next step at stage is to identify the area for improvement so that improvement efforts are concentrated on that area and process. Once an area for improvement has been identified, the most critical processes that need to be improved should be identified. It is also imperative to identify the causes of the problems and the inhibiting barriers to quality improvement in the selected area.

The Check stage involves setting up standards against identified needs including professionally determined needs. The stage also involves establishing measures to ensure compliance to identified needs. At the Action stage the organisation should be able to deliver that which will satisfy its customers, namely, which are quality services or products.

Haigh and Morris (1995) may have offered a more comprehensive model for transforming the principles of TQM into practice. The model offered encompasses a set of elements, concepts, and principles. Haigh and Morris (1995) referred to as the macro or contextual elements of TQM imperative, according to Morris and Haigh (1996), to interconnect the macro or contextual

elements of the model with its micro elements or principles, through a number of operational concepts in order to provide the basis for day-to-day Activities that make TQM manifest within an organisation. The listed in the operational concepts of which is relevant to the researcher are:

1. Internal and External Customers.
2. Teamwork.
3. Quality through People.
4. Management Commitment.

The first operational concept (Internal and External Customers) emphasises that the organisation and its management must recognise the importance of both internal and external customers, and must work towards satisfying those customers. In practice, according to this concept, it is imperative to satisfy the employees and treat them as internal customers in order to attain external customer satisfaction, as without internal customer satisfaction it would be hard to deliver what satisfy the external customer. The concept is based on giving employees the same status as is accorded to external customers in terms of meeting their needs and requirements. According to Riley *et.al* (2004, p. 427), signalling the relevance for considering multiple influences in any system, both internal and external.

The second concept (Teamwork) is based on the idea that the quality improvement can be achieved through teamwork. Morris and Haigh (1996) advocated that it is the activities of teams which facilitate an organisation moving from a traditional work system to a high performance work system. Morris and Haigh added that the source of a team's power in an organisational context, in which the objective is the enhanced quality of the product or service which the organisation offers to its external and internal customers, must emanate from management. In addition, emphasis must be upon the capability of the team to resolve problems of poor quality (Morris and Haigh 1995 and 1996, Kanji 1994), which requires that the team has possession of the necessary skills and abilities to analyse symptoms; establish causes; generate remedies; test the chosen

remedy under operating conditions; monitor the chosen remedy; and report on the quality gains made and held.

The team, according to Morris and Haigh (1996), need to be trained in the techniques of quality decision-making and possess the skills demanded of that possess. According to David and Murat (1997) stated that Teamwork is necessary to allow each person to get the assistance required to be successful individually, and collectively as a team. The whole construction industry is project oriented; so improved quality performance must be project-related and must include the whole project team. Manufacturer, subcontractors, main contractor, vendors, professional designers, project managers and above all, the owner must be involved in the process. Partnering arrangements between these parties will enhance total quality.

The concept of Quality through People emphasises the role of an organisation's people in the quality improvement process. It is essential according to this concept to believe in the fact that an organisation's systems and procedures could not produce quality without the effective participation and involvement of its human resource in the quality improvement processes. Therefore, the people of an organisation must be given a prominent role in the improvement processes, and must be qualified to conduct improvement tasks. The concept of Quality on All Agendas requires that quality barriers and their related issues must be on management's agendas at all the time in order to attain quality improvement. It is imperative that management should consider quality matters as part of its daily routine work so that quality becomes part of an organisation's culture and is included in every aspect of work undertaken. The concept of All Work is Process suggests that work should be considered as a process that has inputs and outputs, and thus, it requires appropriate inputs to gain appropriate outputs. As a result, it is necessary to have appropriate and defined inputs to a quality improvement process in order to attain improved and quality outputs.

The concept of Management Commitment emphasises management's role in the quality improvement process. It requires that management show visible, serious and personal commitment to the quality improvement process, as

without those commitments from management, the personnel at the lower levels would not themselves show appropriate and serious commitment to the improvement processes. It is imperative that management shows commitment to the improvement processes by listening to the suggestions of those involved in the improvement processes; regularly reviewing and auditing the progress of the improvement processes; taking corrective and prompt actions when necessary; recognising and rewarding the achievements of those contributing to the improvement processes. Balzarova *et.al* (2002) cited that lack of identifying a clear mission as a measurement tool of performance of an organisation is a barrier in successful implementation in some firms in the UK. According to David and Murat (1997) stated that Management commitment to quality and to continuous quality improvement is very important in each phase of the building process. Management must participate in the implementation process and be fully committed to it if TQM is to succeed. Furthermore, Deming's Plan-Do-Check-Act Cycle can be adopted as a systemic approach for implementing and auditing the principle of continuous improvement, which is clearly these cycle are relevant to initial idea are used in chapter discussion. Another technique that can be adopted for measuring and ensuring continuous improvement is benchmarking. An organisation could measure its continuous improvement efforts by benchmarking or comparing the process of improvement with competitors' processes, or with its own processes in other areas that seems to be more improved than the process that it attempt to improve. Also Curry and Kadasah (2002) in an Arabic study revealed that top management commitment was high except some managers did not review the quality progress of their departments.

3.4.1 PEST analysis

Nesan and Holt (1999) have suggested that organisations in the construction industry tend to be reactive to environmental changes being imposed on them (due to economic, political, social and technological pressures), and as a result the industry has been criticised for its poor performance in relation to other industries.

Love *et.al.* (1998) suggest that TQM can be used to create an organisation where change is considered the norm, rather than a reactionary response to environmental pressures. Political, Economic, Socio-cultural and Technological (PEST). Government / public sector: comprise typically the function and role of government, government policies and programmes, legal and regulatory environment, public sector interfaces, taxation issues, and the rule of law, among others. Economic/technological: comprise the markets, macro-economic frameworks, global linkages information and communications technology, and development assistance. Of particular note are rapid advances in information and communications technology that are forcing profound changes (and need for change) at not just the entity and individual levels, but at the broader systems levels as well. Socio-cultural includes the social barriers include traditions, values, societal trends, consumer psychology, and a society's expectations of business (Wright *et.al* 1992).

It is very important for problem solving to have an overall look on the problem of the Company (A&B) and the justification to use the PEST analysis to find out more deep information to the case study (A&B) related to the public sector and to understand the barriers affect to implement total quality management a good start is to first understand the external environment. The end of this chapter presents and proposes a conceptual framework for TQM implementation in Libyan construction industry and the relation with pest analysis. The social and cultural influences on business vary from country to country. It is very important that such factors are considered. According to (Wright. *et.al.*, 1992:22) stated that the social barriers include traditions, values, societal trends, consumer psychology, and a society's expectations of business. Next part (Socio-economic influences) will explain deep about the Socio-cultural.

Jobber (2001) suggests that "a major technological change which is affecting quality is development in information technology. The Internet is revolutionising have companies conduct business". Moreover said technology has a significant effect on the business success; it is participated in enhancing the relationship between the company and its customer. The internet increased the rate of sale because of purchase online and it offered change to greenhorn companies

compete with their advanced competitors. Moreover, the company can collect useful information about its customer and exploit it to understand the market and provide the services according to the customer needs. Libya is developing country and has relatively limited communication facilities, for example, The Internet and World Wide Web have been launched in Libya few years ago. The majority of Libyans are still trying to improve their capabilities in dealing with such new technology (PROJEX LIBYA. 2007).

Curry and Kadasah (2002) quoted Mersha (1997) who suggests that governments in developing countries should provide an appropriate environment with reasonable infrastructure for industry as a whole. Insufficient technology is a barrier to implement TQM in India, China and Mexico (Zhao *et.al.*, 1995). Awan and Bhatti (2003), Lipovatz *et.al* (1999), Fuentes *et.al.* (2000) and Moser and Bailey (1997) cited that lack of calibration agencies is a barrier inhibiting implementation of TQM in many organisations. In addition to that, Yahya and Goh (2001) quoted Quinlan (1996) who highlights that improper calibration of tools and gauges is a barrier which causes failure of organisations in certification audit.

During the 1990s, the Libyan authorities worked to improve the business environment and make it more attractive for overseas investors. In 2000, The Libya Government invited local and foreign investors to take a part in the five-year plan to help privatize its industries, local authorities have been marketing investment opportunities to foreign companies and instituting reforms to make the business environment more attractive (PROJEX LIBYA. 2006) According to Wilson, (2000), said the nature of change that are currently happening in the economic environment is recognized as, a raise in real income growth, continuing inflationary force, changing in the savings, concern over levels of third world liability and diverse consumer expenditure patterns. The non-oil industrialized and construction sectors have extended from agricultural products to contain petrochemicals, iron, steel, and aluminium. Furthermore, Libya government seems to be has stability in its political situation. And finally, it is a change in an organisation's political system: decision making processes and power bases. For substantive change to occur, changes in these three

dimensions must be aligned: TQM as a technological change will not be successful unless cultural and political dimensions are attended to as well (Tichey, 1983).

This lesson provides a real bridge between industries, government and the dynamic relationships of the barriers.

3.4.2 Benchmarking

Gotzamani (2004) said the objectives and process for construction project management create a good environment for the effective use of benchmarking for measuring and improving performance. Kumar, (2006) cited that benchmarking is a core component of continuous improvement programs, underpinned by quality system, maintained by internal quality audits and management reviews and incorporating feedback from quality-training programs. Gotzamani (2004) added that analysis of these, including any defect or shortfall in performance, would provide valuable information for use in improving the systems and products, where it is required. Moreover (Deming, 1986) said teams are essential for maintaining constancy of purpose; for breaking down barriers between departments and for driving out fear, and team leaders must have the ability to motivate team members in ways to meet these objectives.

Ahire *et.al* (1996) have also developed measures for constructs commonly associated with TQM by the Baldrige Award, including top management commitment, teamwork ,customer focus, employee involvement, employee empowerment, employee training, and others. The most famous set of prescriptions to emerge from Deming's work were the Fourteen Points (Deming 1981, 1982 and 1986). The emphasis of these points is essentially about the attitudes that should exist and the nature of the relationships among people in successful organisations. From the Fourteen Points, a number of researchers began to develop concepts and theoretical relationships between them that specify the relationship between TQM to different sector.

Deming (1993. p105) said in the late 1970s and early 1980s, previously unchallenged American industries lost substantial market share in both US and

world markets. To regain the competitive edge, companies began to adopt productivity improvement programs which had proven themselves particularly successful in Japan. One of these "improvement programs" was the total quality management (TQM) system. The researcher needs to be done to examine cultural attitudes among construction workers in Libya with the goal of predicting potential obstacles to the adoption the principles throughout the construction sector.

3.5 The need for a framework

The survey of TQM literature revealed that TQM implementation is perceived as a complex process and as an arduous task and reveals that the quality provided only guidelines or prescriptions and did not offer a specific model or framework for implementing the concepts and principles of TQM. Morris and Haigh (1996), to interconnect the macro or contextual elements of his model with its micro elements or principles, through a number of operational concepts in order to provide the basis for day-to-day Activities that make TQM manifest within an organisation. Moreover Smith *et.al* (1993) states that one of the common reasons for the failure of TQM is the cultural position of the company. The Egan Report on Rethinking Construction (Egan, 1998) stresses the need for the industry to make substantial changes in its culture and structure, as a driver for improvements inefficiency, quality and safety. However, addressing culture change has not been easy since most people are unclear about exactly what this means and how it should be approached.

This research is carried out in one developing country, and then it is important to take it into consideration in line with other external barriers. Moreover Cameron and Quinn (1999) states that to implement the TQM effectively in any organisation, an investigation and assessment of the existing organisational culture and management approach appeared very important barriers and should be taken in consideration in any organisation. External audit is used to monitor or scan the wealth of strategic published information, this process of collecting and analysing external research information is sometimes called environmental scanning. Johnson and Scholes (1997) agree stating that a

strategy can be seen as matching the activities and needs .The organisational culture barriers are the most important barriers to overcome to make an organisation successful in implementing TQM in the organisation within the changing environment in which it operates.

Gallear (1997) stated that the organisational barriers, which include the lack of understanding the benefits of TQM, awareness of TQM standards, lack of top management commitment, leadership and involvement, and lack of employees' involvement and empowerment. The researcher benefited from these different classifications in developing the conceptual framework for this research as below. In the methodology chapter, the researcher will explain in more detail how he benefited from the elements of the conceptual framework to select the research techniques and developing the questions. Some authors in the literature (for example: Crosby 1979, Dale 1999, Deming 1986, Egan 1998, Haigh and Morris 1995, Hofstede 1980, 1991 and 2001, Johnson and Scholes 1993, Kanji 1996, Kumar 2006, Oakland 2000, Riley *et.al* 2004, Triandis 1990, 1994 and 2002b, Yusof and Aspinwall 2000) grouped the barriers, affecting the implementation of TQM in their studies into different groups and this project has drawn upon this research in developing the conceptual framework for this model. The review of TQM literature showed that TQM culture could be considered one of the main barriers preventing Libyan organisations from adopting TQM in their construction management practice. Accordingly, it is recommended that an organisation intending to adopt TQM should search for an appropriate framework or model that could guide and assist it to make these principles operational. The following Figure 10 presents and proposes a conceptual framework for TQM implementation in Libyan construction companies.

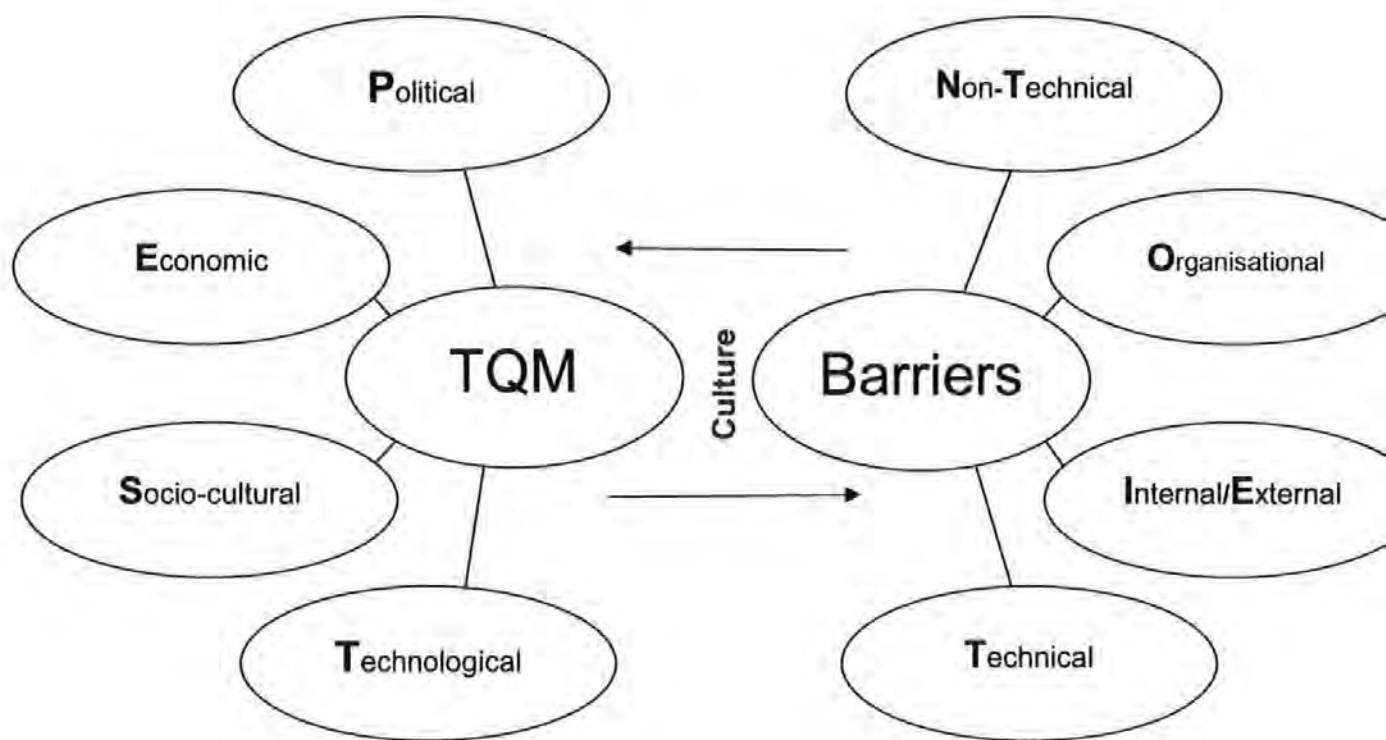


Figure 10 - Conceptual framework

(Source: The author)

3.6 The key of the conceptual framework

The benefits or the idea from the western sources uses them to interrogate Libyan culture and cross the line from western to Libyan culture e.g. In the 1940s, Japanese products were perceived as cheap, shoddy imitations. Japanese industrial leaders recognised this problem and aimed to produce innovative high quality products. They invited a few quality gurus, such as Deming, Juran, and Feigenbaum to learn how to achieve this aim. Deming suggested that they can achieve their goal in five years; not many Japanese believed him. However, they followed his suggestions. Maybe the Japanese thought it was rude to say that they did not believe Whatever reason it was, they took Deming's and other gurus' advice and never looked back.

In the 1950s, quality control and management developed quickly and became a main theme of Japanese management. The idea of quality did not stop at the management levels. Quality circles started in the early 60s. A quality circle is a

volunteer group of workers who meet and discuss issues to improve any aspects of workplace, and make presentations to management with their ideas. The term 'total quality' was used for the first time in a paper by Feigenbaum at the first international conference on quality control in Tokyo in 1969. The term referred to wider issues within an organisation. Ishikawa also discussed 'total quality control' in Japan, which is different from the western idea of total quality. According to his explanation, it means 'company-wide quality control' that involves all employees, from top management to the workers, in quality control in this research to find out the theory to cross the line from western to Libyan culture. Samson (1997) the other hand, stated:

"Many organisations had previously attempted quality circles, as in parts of Europe and the USA, because these had been interpreted as being the answer to rising levels of manufacturing competitiveness in Japanese companies. History has told us that the majority of these initiatives either did not work at all or fell away after achieving some successes. One of the reasons for this is the lack of appropriate human resource and cultural policies and encouragement."

The conceptual framework (Figure 10) displays the dynamic relationships of the four types of barriers to improvement possibilities and four types or factors in TQM called the pest analyses which is good relations to the public sector organisation to find out the cover for TQM and culture barriers. Moreover TQM can be a major change in the culture of an organisation. Indeed, it is not free (with due respect to Crosby). The costs are in the form of these barriers, and developing an attitude of life-long learning.

Also the justification of difference in categorisation,

The external and internal barriers are those affecting the company from inside and outside organisations such as policies and legislations of the country's authorities, and from external customers and internal side to the company.

The organisational culture barriers which are created from the company's management itself such as weakness in leadership and top management

commitment towards the implementation of the system that comes up from management and employee behaviours and attitudes toward the system's implementation. Moreover management culture questionnaire can give organisations an assessment of their current position and a clear picture of what changes are needed to support a total quality approach. Also according to Atkinson (1990) further states that effective cultural change is the key to successfully implementing TQM.

The technical and non technical barriers are those which represented the difficulty that have been found by management and employees in understanding the TQM requirements. From this grouping, it appears that there was a lack in grouping them in just one, two and three categories. Finally, the implementation of TQM includes many issues or barriers that need to be understood and implemented with careful planning and not merely linked to cultural issues. Therefore, the framework is felt to be more suitable, as a vehicle through which to assess the feasibility of introducing TQM into Libyan construction and many of the essential features of TQM that are demanded for improving the Total Quality of case study (A&B) .

3.5 Summary

The present chapter provided an overview of the TQM literature. From this chapter, theories and philosophies of known quality were explained because they are the basis of TQM. The roots of Total Quality Management (TQM) go back to the teachings of Juran, Ishikawa, Crosby, Feigenbaum and countless other people that have studied, practiced, and tried to refine the process of organisational management. TQM is a collection of principles, techniques, processes, and best practices that over time have been proven effective. Most all world-class organisations exhibit the majority of behaviours that are typically identified with TQM.

The overview also reveals that Total quality management concepts have evolved throughout the history; therefore, TQM could be regarded as an extension of the previous quality management concepts and methods. An extensive review for the literature was carried out by the researcher to get a deep understanding of

issues related to TQM implementation in construction industry. Many important barriers should be taken in consideration by any organisation's management to avoid those becoming barriers in implementation of the TQM. For example, Culture, top management commitment, education and training programs related to the system, employee involvement and empowerment and effective communication. Many barriers have found to affect TQM to be implemented. An investigation and assessment of the existing organisational culture and change management approach was carried out by the research to get understanding about its common aspects and issues. The literature presented in this chapter helped in achieving the first three objectives of this research.

Chapter 4 – Libyan culture and the case study in context

4.1 Introduction

TQM has played a significant role in the organisations success worldwide, specifically in the western world. It has been confirmed by empirical research that there are major differences between the developed and developing countries in issue of politics, economics and social environment. Jaeger (1990), Easterby-Smith *et.al* (1993) and Hofstede (1980) affirmed that most management theories and practices are culture bound and argued that differences in socio-political and socio-economic factors would hinder the cross-cultural transferability and applicability of TQM concepts, principles, and practices. For this reason any study into the adoption of TQM in a culture other than a developed western country would need to consider the local cultural context in more detail. Differences in national cultures may justify the difference that could be found between the management styles in domestic or national and multinational companies in Libya. In comparing between Arab and Western culture and its potential impact on management or TQM Practices and policies, Hickson and Pugh (1995), in their comprehensive study on the impact of societal culture on organisations around the world, argued that Arab culture has certain distinctive features that dominate managerial thinking and behaviour.

This chapter provides an analysis of modern social, political and economic culture in Libya with the aim of providing a better insight into the interpretation of human resource management practices, which are fundamental, the success of TQM policies. It starts with a broad analysis of Arab cultural values, as this provides the context from which modern Libyan culture has developed.

4.2 Arab cultural values

The discussion about Arab culture is a very important factor to be taken in this study, because of its direct influence on the implementation of the TQM in the

public sector organisations. According to Hall (1990), High-Context and Low-Context cultures in some countries in the world as seen in figure 11. The collectivism vs. individualism dimension was proposed by Hofstede (1980) and suggested as two dimensions of culture. High Context (HC) cultures tend to be collectivistic while Low Context (LC) cultures tend to be individualistic. However, LC cultures also tend to be those where an emphasis is put on the goals and accomplishments of the individual rather than the group. HC cultures prioritize group welfare over the goals of the individual.

High Context Cultures

Japan

Arab Countries

Greece

Spain

Italy

England

France

North America

Scandinavian Countries

German-speaking Countries

Low Context Cultures

Figure 11 - Understanding Cultural Differences

(Source: Hall and Hall 1990)

The family's history often has an influence on the way people see an individual, whereas personal accomplishments will play a minor role. In Libya, social relations are much tied to the family consideration. This means that family obligations have priority over any other obligations such as job obligations. Islamic religion and Arabic language are spread over all Libyan economy the two dominant elements in Libyan culture. These two elements laid the basis for the social homogeneity of Libyan people (Farley, 1971). Elfathaly (1979) cited that the developing countries imported modern management theories and

techniques to speed up their industrial development. Many organisational practices and management programs in the developing countries are based on the adoption of the experience of the developed countries model without taking in their consideration the cultural constraints resulting from a wide gap between cultural values of developing countries and the values practiced in the developed countries. Furthermore, Kanungo and Jaeger (1990), said that organisational structures in developing countries are hierarchical, status-oriented and decisions are made on the basis of non-rational criteria.

In the Libyan organisations, England and Harpaz (1990) mentioned that "during the official working hours little attention is paid to the importance of time as employees spend a lot of time meeting their visitors during working hours". The majority of people working in public organisations do not follow the rules and regulations of their managers. Then the administrative mistakes have been increased which lead to a delay in achieving the organisation's objectives and difficulty in performing many policies, such as manpower development. In the 1990s; the Libyan government issued a decision that the Libyan companies must train their employees in the Libyan National Institute of Public Administration and no possibility to do training abroad. This institute suffers from a shortage of the required resources to enable it to meet this responsibility. That caused a shortage in availability of skilled employees in the companies.

Hickson and Pugh (1995) stated that the features of interest here are those that seem to have some reflection on the human resource management and culture in Arab organisations among those features are:

- Within Arab organisations status, position and seniority significantly outweigh ability and performance in importance.
- Arab organisations are centrally controlled with a low level of delegation, i.e. the Power to decide is centralised and rarely delegated. The opportunities for lower-levels Managers to bear responsibilities and initiative can be restricted. So too can the Opportunities for those at the top to appreciate what is happening below. In as much as both those below and those above have a personalised concept of power, failures

are blamed on the head of the organisation personally and the solution is seen in his removal as much as in an analysis of what is wrong.

- Subordinates in Arab organisations act with deference and obedience in the formal hierarchy of authority.
- Authoritarian management style is predominant in Arab organisations.
- Decision-making is constantly pushed upwards in the organisation.
- The decision-making process is influenced by the prevalence of paternalistic and familial patterns there is an absence of western-style democratic systems.
- Organisation members are motivated by affiliation and power needs rather than by performance objectives.
- Social formalities are extremely important.
- Innovation and risk-taking are activities that seem to be more often punished than rewarded.
- A low-trust atmosphere and political gamesmanship characterise Arab organisations, together with closed information systems and low levels of disclosure to organisation members.
- Constant change and high levels of uncertainty at work.
- There is little opposition and resistance from subordinates.
- There is a strong preference for a person-oriented approach rather than a task-oriented approach in managerial activities

Culture is the social glue that helps hold the organisation together by providing appropriate standards for what employees should say and do (Robbins 1995). As a consequence, culture reduces an employee's hesitation and worry about expected behaviour. An organisation's culture differentiates it from other organisations and helps to explain why employees are attracted to one employer in opposition to other employers. Culture helps to explain why some organisations are more successful than others. However, the following shows the relationship of culture to the performance of an organisation.

- Culture can have a major impact on a firm's long-term economic performance.

- Culture will be an even more important factor in determining the success or failure of firms in the next decade.
- Cultures that inhibit strong long-term financial performance are common, and they develop easily, even when employees are reasonable and intelligent people.
- Although tough to change, cultures can be made more performance.

However, today multinational organisations bring together people from different parts of the world, with different culture backgrounds, educational, religious, language, etc. If, being members of the same organisation and these people refuse to understand each other, or they unable to look at the world and try to remark it, from the point of view of other countries is culture, this organisation will hardly be successful. A very similar point of view was presented by Tayeb (1996) who stated that "in the modern world, where multinationals recruit employees from a global labour market, and where expatriate managers and employees work side by side with the local people, it is of the utmost importance for everybody concerned to be aware of cultural differences".

4.3 National culture

Smith *et.al.*(1993) (1992) writes that, different national cultures, within which organisations are located, are frequently given to these organisations different managers. Considering this possibility, Smith *et.al.*(1993) (1992) concludes, that to make the work effective across -cultures is not just to apply the skills which are the most effective within some particular culture, it also requires understanding and coping with the processes of communication and decision-making in settings where these are achieved in a different behaviour. According to survey presented by Schneider and Barsoux (1997) thirty-five percent of senior executives ranked cultural differences as the number one problem in foreign acquisitions. Some writers also believe that cultural diversity could be even used as an advantage and contribute to the organisational success. For example, successfully managed cultural differences, can lead to modern business practices, faster and better learning within the organisation, and sustainable sources of competitive advantage Hoecklin (1995).

National culture is very important for organisational life, because people from different countries of the world can contact each other successfully only through understanding the cultural differences between them. Only through the ability to see the world the way others do, people can lead to a success of the organisation. While rejecting and misunderstanding of cultural diversity can lead any organisation to very serious problems. There are other influences that also shape beliefs, attitudes, perceptions and behaviours, individual personality is one strong influence and the specifics of a given situation are another. For example, US culture is characterised by a strong value of individualism. Throughout the world, Americans have a reputation for being independent, self-reliant and centrally concerned about individuals than group, while it in the Arab world is the other way around. It is therefore essential that managers, at all levels management, who are involved with international work, are aware of the national cultural characteristics of participants. This awareness will help to ensure the success of the work in a number of ways including:

- Identifying and understanding the different national culture characteristics.
- Understanding the effects of national culture on the work
- Assessing the national culture borders and levels of acceptance available.
- Being aware of aspects which can, or cannot, be changed
- Preparing for the impact of external national culture changes
- The process of awareness should be as early as possible, to enable details of the cultural framework to be identified, in order to examine the many different aspects of the national culture of international work participants.

National culture has a significant influence on the organisational culture, For example, with regard to the issues of how people interact with the environment and with each other. The power distance and uncertainty avoidance could be applied to the issues related to managerial style and communication and motivation that are tackled by management as well as to the issues of workforce response. The application of these criteria will help to define the reason of

organisational behaviour. By other mean, the culture background of organisational employees has a great influence on organisational culture. National culture and organisational culture are strongly related, for example, some an international organisation has different culture from branch to another that fit the national culture of the country they are in. Also, the organisation inherits the national characteristics of the environment in which the organisations exist and operate; "it" does not mean that all companies in the same country have the same organisational culture.

4.4 Libyan social culture

Culture is represented as a set of common beliefs, values and norms, theories of behaviour, or mental programs that are shared by people living in society (Hofstede, 1980; Harris and Moran, 1999). Since the 1960s, a great number of studies have been undertaken with a view to unravelling the influence of culture in impacting management practice (e.g. Hofstede 1980, Trompenaars 1993). The success of the Pacific Rim countries made the issue even more central as awareness of culture's influence on TQM seemed to play a role in their success story. Sanderson (1992, p.143) quoted Schien (1985) who defines the organisational culture as "the deeper levels of assumptions and beliefs that are shared by members of an organisation that operate unconsciously and that define in a basic of an organisation's view of itself and its environment".

Furthermore, Claver *et.al* (2000, p.343) define organisational culture as " a set of values, symbols and rituals shared by the members of a certain firm that describe the way things are done within the organisation when solving internal managerial problems, together with those related to customers, suppliers and environment". Culture in the Arab world is closely linked to religion, as it relates to all aspects of life among Muslims. However, they aware that beliefs and culture are quite diverse due to historical, economic, and social difference (e.g Muna 1980). El-Gamal (2000) argues that key sources of Arab managerial conceptualisation and practices are the Islamic religion, Arab culture, the Westernisation effect, and the political, economic, and social systems. The emphasis on the effects of the Islamic religion and Arab culture is consistent

with a body of research that underscores the impotence of culture (e.g. Wright, 1981, Tayeb 1996).

Thus the study of TQM implementation in construction management in Libya cannot be properly carried out without an understanding of the governmental and its surrounding environment impact on the implementation of the system.

Studies have indicated that Arab countries exhibit higher level of loyalty towards community (or collectivistic orientation), power distance, paternalism, femininity, uncertainty avoidance, fatalism, and context dependence (e.g. Hofstede, 1991; Harris and Moran, 1999). These cultural orientations manifest themselves in organisations in a number of ways. Individuals, who, in these societies, maintain the tradition of extended family and joint family systems, feel a strong sense of loyalty to their families and communities. The extended family, clan, tribe, village, and Islam play a major role in community life and interpersonal relationships, which is a common practice in Africa.

Work goals are accomplished by individuals and work teams primarily because of personalized relations with the supervisor, subordinated, and peers. The feature of high power distance stems from the rigid and hierarchical structure of social institutions. Hofstede (1980) argues that organisations in such societies would tend to have more levels of hierarchy, a higher proportion of supervisory personnel, and more centralized decision-making. Status and power would serve as motivators, and leaders would be revered or obeyed unquestioningly even if their instructions were deemed to be burdensome by subordinates.

The combined effect of high community loyalty and high power distance manifests itself in paternalism in managing the human resource. Paternalism characterizes the supervisor-subordinate relationship within the organisation. Supervisors in positions of authority assume the role of a parent and consider it an obligation to provide support and protection to subordinates under their care. Subordinates, in turn, reciprocate such care, support, and protection by showing loyalty, deference, and compliance to the supervisors. Subordinates show loyalty and respect to their supervisors in the same way children do to their parents and students do to their teachers. People have been socialized to

interact only with those within their age groups, and not to associate closely with their elders. Therefore, respect for age features prominently in the behaviour of Libyan society and organisations. Abdul-Khaliq *et.al* (1982) said that Arab managers often concentrate on seniority, rather than merit, in most of their decisions that affect employee relations. Moreover, most managerial practices in Libya result directly from the belief of in- group embedded ness and hierarchy. For example, the power of decision-making is largely in the hands of top management and subordinates prefer seeking guidance, direction, affection, and patronage from their superiors in all matters.

Libyan place emphasis on masculinity, mediated by the requirement to have good working relationships with one's direct superior, and to work with people who cooperate well, to live in an area appropriate to one's self image, and to have employment security. This is evident from the fact that there are strong gender role distinctions and women's work is identifiable as lying within the family domain. By the 1980s, however, modifications in traditional relationships between sexes were becoming evident, and important changes were appearing in the traditional role of women. The considerable number of girls in secondary school and the ability of young women to find modern sector jobs indicate the extent to which the Libyan community is changing. The high context dependency characteristic of Arab countries implies that people in these countries have a tendency to utilize salient contextual experiences to justify their behaviour (Jones *et.al* 1995).

Libyans law defines selection as the process and procedures which are carried out by organisations for offering a job to a person who has passed all legal requirements requested by an employer. This aspect of human resource management (HRM) has been subject to extensive research, most probably because it is the beginning of human resource entry into the organisation. For a long time now, organisational psychologists have tried to find the means by which organisations can choose the best person who fit the job in question. Schwartz (1999) agreed that a challenge is created by a focus on fit as a staffing criterion because it tends not to be well defined and it can be manipulated, managed, and shaped by the conscious efforts of applicants and

employees. Several techniques have been developed or improved, i.e. the interview, psychological testing, application blank, and reference checks. In most cases, especially in Arab countries, the selection interview the main technique used during this process. Guion and Gibson (1988) reported that, the world over, the interview is widely used in spite of repeated discouraging summaries of unreliability and questionable validity. In Libya, reliance is on personal contacts and getting people from the right social origins to fill major positions. Libya uses both internal and external sources to locate employees.

In Libyan organisations, is mainly the responsibility of the HR department in liaison with the needy department or section? Before 1998, vacant positions were filled either internally or externally through a government body called the General Workforce Corporation (GWC). The GWC used to place advertisements nationally or internationally via the overseas branches of the companies in Europe, Canada, and the Far East. The notion of internal selection, whereby organisations is considering their own employees, is not the sense in which the term used here. Internal selection is normally aimed at recruiting domestic employees, especially from the Libyan labour market. It connotes national selection and not necessarily from the same company. Before the abolition of the GWC in 1998, the process followed was that the HR department of the affected organisation provided each department's needs for new employees.

Libyan industrial companies, like those in many other developing countries, are owned, managed and supervised by government institutions. However, Libya's case is unique in the sense that the concept of using "People's Committees," urged by Qadhafi, impacts the running of most organisations (Wright, 1982). Earlier on in this chapter, it was indicated that Qadhafi's brand of management required that workers' self-management committees and profit participation partnership function in private and public enterprises. The government has substantial influence on most companies, which dictated that those who are well connected have the majority of the top jobs. As pointed out earlier, interpersonal relationships, family ties, sectarianism, and ideological affiliation are important barriers in recruitment and promotion decisions. In most developing countries

patronage is evident almost everywhere and group-oriented society politicians making it their duty to reward those who are loyal to the ruling elite. This fact influences selection decisions in most organisations in Libya.

It is pertinent to argue that societal values influence Libyan managers' approach to the selection process. For example, since Libyans are reported to exhibit high masculinity and adhere to Islamic ethos (e.g. Wright, 1982), women are not normally selected for high-levels executive jobs. Since masculine cultures see work achievement as a major life goal, Libyans place more reliance on abstract criteria directly created in the workplace, such as procedures. Further, because Libya is a paternalistic society, selection might be made on the basis of patronage and associations. Such societies are more collectivist and those who are in high places may want to help those that belong to the same clan or ethnic group. Earlier, it was pointed out that supervisors in positions of authority assume the role of parent and consider it their obligation to provide support and protection to subordinates under their care. Consequently, subordinates reciprocate such care, support, and protection by showing loyalty, deference, and compliance to the supervisor.

In Libya, supervisors make a decision, which gains their superiors' approval. At the same time, they do not seek directly the boss's assistance, since this could imply a lack of deference. However, they do rely more upon formal rules, informal norms, and the guidance of peers. For most organisations Islam is way of life, hence religion is a major consideration in selecting those who might fit into the organisation's culture. Because Libya is collectivist country, with rich social networks, most managers are aware of those potential personnel and where they can be found. Often the managers will consult with the boss and colleagues, who, being part of the same network, will have informed opinions about the prospective candidate. The purpose of such consultation will be to test indirectly whether there is consensus on the desirability of the prospective candidate prior to the formal selection process. Such groundwork provides a guarantee of continued smooth functioning of the team even after the induction of the new subordinate (PROJEX LIBYA 2007).

Libya has recently paid more attention to administration reform; management training and development (MTD) institutions have been established, organisational structures of public-sector companies were reviewed, work procedures were simplified and a lot of people were sent abroad in order to gain knowledge, skills and positive attitudes towards their organisations. In Libya, the main objective of training and development is to meet the required quota of local employees, Training and development have been great concern to Libyan government; the first engineering college in the country was founded in 1961. The college of Higher Technical Studies was annexed to the Libyan university. Libyan management practices are not effectively carried out in order to meet required standards due to political and cultural barriers. Ramadan (2002) who cited that Libya is still facing a shortage of skilled and trained people in several fields, because new needs have been appearing as a result of the changes in the economic and social structure. There are many issues that have played an important role in formulating the current situation of human resource development that include:

- The economic development programs implemented in the 1970s have imposed much pressure on management development and education establishments to provide the number of qualified, trained and educated people needed to fill the shortage found in development plans.
- The direct governmental control of the public sector and the centralisation in the planning of economic projects caused the need for high-qualified people able to manage these projects.
- The expansion that happened of the public sector led to greater need for high-qualified managers.

In the early 1970s, the government began a drive for economic development. It set up management-training centres, and gave the ministry responsible for development and training more authority for sponsoring and conducting management-development programs. This change has recently been reversed. Reforming the economy was parallel with the attempt to remould political and social institutions until the late 1970 the economy was mixed with large role for

private enterprises except in the fields of oil production and distribution, banking and insurance.

4.5 Libyan political culture

The political-administrative system is based on the first written constitution, which came into force in 1971. Since that date, Qadhafi's regime was committed to a more equitable distribution of Libya's enormous oil income, and billions of dollars were spent on roads, schools, housing, hospitals and agriculture. During the 1970s, Qadhafi penned the *Green Book*, which he claims is a radical alternative to capitalism and communism. Launching his revolution, he declared Libya to be a *Jamahiriyah* (loosely translated as a 'state of the masses') and set about dismantling the state apparatus and replacing it with people's committees. In practice, however, Libya's government was and remains a strict military dictatorship. The instrument for doing this was the "people's committees". People's committees were established in such widely divergent organisations as universities, private business firms, government bureaucracies, and the broadcast media, consequently having serious implications on the management of employees (Wright, 1982). In the scope of their administrative and regulatory tasks and the method of their members' selection, the people's committees embodied the concept of direct democracy that Qadhafi propounded in the first volume of *The Green Book*, which appeared in 1976. The same concept lay behind proposals to create a new political structure composed of "people's congresses".

The centrepiece to create a new system was the General People's Congress (GPC). All adults had the right and duty to participate in the deliberation of their local Basic people's Congress (BPC), whose decisions were passed to the GPC for consideration and implementation into national policy. Continuing to revamp Libyan's political and administrative structures, Qadhafi introduced yet another element into the body politic.

Beginning in 1977, "revolutionary committees" were organised and assigned the task of "absolute revolutionary" supervision of the people's power. The basic units of Libyan society are the extended family, the clan, the tribe and the

village. Each of these plays a very important role in the individual and community's life. Any individual in the Libyan culture is identified with his family; his good or bad behaviour even brings the shame or fame to the family and the tribe. Moreover, barriers of kinship and collective solidarity most influence the selection of leaders in the society. The selection of managers or decision-makers in Libyan organisations is highly influenced by the individual's family or kinship or tribe background which leads to wrong people in wrong positions and promotion of managers, departments and directors not based on qualification (Elfathaly 1979).

El-Gamal (2000) points out that Arab management focus an ever-increasing challenge to keep up with management in developed countries due to globalisation. Researchers argue for context-based models of management in the Arab world because of the serious challenges posed by falling crude oil prices and the extension of their business into petrochemical industries

4.6 Libyan economic culture

Clearly, Libya's economy is socialist oriented, depending primarily upon revenues from the oil sector, which contributes practically all export earnings and about one-quarter of GDP. These oil revenues and a small population give Libya one of the highest per capita GDPs in Africa (GDP per capita is US\$7,600, 2001 estimate). However, according to the year 2000 estimates, the country has an unemployment rate of 30 percent. Import restrictions and inefficient resource allocation have led to periodic shortages of basic goods and foodstuffs. Climate conditions and poor soils severely limit agricultural output, and Libya imports about 75 percent of its food (CIA 2002). The non-oil manufacturing and construction sectors, which account for about 20 percent of GDP, have expanded from processing mostly agricultural products to include the production of petrochemicals, iron, steel, and aluminium. Libya has an estimated labour force of 1.5 million (2000 estimate) (CIA 2002). In 1994, the Libyan authorities put a plan to replacing foreign labour with Libyans, improving productivity and profitability in all sectors. The pace of an effective liberalisation policy is essentially governed by the availability of Libyan replacements,

especially in the major strategic industries such as the oil industry and construction sector.

Libya has an old banking system; however it has undergone certain changes in the recent past. The central bank regulates and controls all the nationalised banks in Libya. Indeed, Libya still has the 20th century system where no credit or debit cards, and no 24 hours services. In fact, Bank information systems are very poor in Libya. Libya has had a good number of European operated branches. In 1970, these branches were mostly nationalised and renamed under titles reflecting state ownership. Libya has only one bank for international banking business, which is Libyan Arab Foreign Bank (LAFB) that was established in 1972. Libya has one private sector bank at present called Bank of Commerce and Development that was started in 1997 and its business is growing rapidly. However, some European banks have started negotiation with the Libyan authority for operating their branches again in the country.

The main objective of Libyan economy planning in recent years has been to utilise oil revenues to raise the standard of living for present and future organisations. Libya with important oil industries have better opportunities of promoting the development of its economy more rapidly than some Arabic and African countries which should use a percentage of their foreign exchange to pay for its imports (Aghaia 1996). In 1978 the Libyan authorities started to eliminate private ownership and established a comprehensive system of price controls. Since 1988, encouragement has been given to private partnerships and cooperatives in manufacturing. Most aspects of production and trade remained under public control. In the 1970s, as a developing country, Libya was relatively new to the industrialised world.

After the great increase in the oil prices and subsequent accumulation of wealth, the country began to implement ambitious industrial policies. The Libyan state led to investment in the industrial sector. It was perceived as a way to gain economic independence by investing in industries to produce products that substituted most of the imported goods needed. In this period, many intermediate and heavy industries were built, where about twenty-five companies producing different products such as tractors, buses, trucks, steel

pipe, plastic, cement, batteries, tires, chemicals and electronics. Also, about forty two companies in light industries were established including furniture, construction materials, paper, textile, food and fish canning (Agnaiia 1990). The construction management in Libya has not done so well in both quality and standardisation dimensions. It has not been successful in mobilising resources and efforts for the research and development of quality consciousness of product or services.

In 2000, the Industry Secretariat was abolished and substituted GIC, which is affiliated to the General Popular Committee. The GIC have been established to supervise the manufacturing public sector organisations only (Intermediate and Heavy factories). According to GIC (2002) some of its tasks are:

- Improvement of Libyan product quality.
- Promotion of Libyan industrial exports.
- To encourage its organisations to participate in the establishment of standards for domestic industries.

Libya's economic progress is dependent on overseas technology and expertise for the expansion, upgrading and modernisation of its vital infrastructure. This is central to an ambitious multi-billion dollar National Development Plan which has a US\$14 billion allocation for 2007 alone, representing 60% of the total annual budget.

The Plan focuses on housing and aims to provide 50,000 units a year to keep pace with the growing population. It also includes the construction and equipping of schools and hospitals, road and bridge building (including 2,000kms of road improvements), water and sewerage projects (US\$6 billion has been allocated to waste water systems and management), the renovation and construction of airports (a new terminal at Tripoli International Airport and the construction of a new airport in Benghazi are a priority). All this activity will put increased demands on the power sector which is set to double in terms of output from 4,700MW to 9,700MW within the next five years at a projected cost of US\$7.5 billion (PROJEX LIBYA 2007).

Libya's first of these infrastructure projects was celebrated with a highly successful inaugural event, which took place in December 2006. The event was attended by 2585 business professionals including government, public and private sector planners, specifies and procurement officials, engineers of all disciplines, specialist contractors; consultancies and trading agencies. In addition 141 companies from 21 countries, including major presentations from Britain, Italy, Russia, South Africa, Spain and the USA, displayed wide ranges of technology and expertise appropriate to Libya's economic development needs were invited (PROJEX LIBYA 2007).

4.7 Libyan economic development

The Libyan economy depends primarily upon revenues from oil and natural gas in addition to petrochemical and other industrial products. Machines, transportation, food requirements are the major imports. And the major export and import partners are Italy, Germany, Spain, Egypt, and Tunisia. Unfortunately, the past years, Libya could not have significant progress in other sectors of the economy, however, recently has emphasised on improving and increasing the private sector in business and industrial activities (Tarbaghia *et.al* 1994). Despite the attempts of Libyan activities in developing the administrative system, there are several shortages and problems related to administrative development including the lack of a comprehensive plan concerned with administrative development in all of the country's sectors and for improving the dependence on oil and gas as a major income of the country. Table 9 shows Libya economic information and population growth.

Gross Domestic Product (GDP) is a value measure of the flow of domestic goods and services produced by an economy over a period of time such as a year. The GDP demonstrated Libya during the period from 1995 to 1999 had range of \$US 37.0 billion GDP. In terms of global ranking, this placed Libya 70 out of 191 countries in terms of GDP, 106 out of 191 countries in terms of population and 57 out of 191 countries in terms of GDP per capita. Also, 30% unemployment rate in Libya was recorded during the year 2001.

Population	5,368,585 (2002)
Population Growth	2.41% (2002)
Land Area	1,775,500 sq km
Currency	1 LD = \$ 0.764 = 0.866 Euro (average)
Gross Domestic Product (GDP)	\$ 40 billions (2001)
GDP Real Growth Rate	3% (2001)
GDP Per Capita Income	7,600 (2001)
GDP Composition by Sector	Agriculture: 7% - Industry: 47% - Services: 46%.
Inflation Rate (Consumer Prices)	13.6 % (2001)
Labour Force	1.5 million
Unemployment Rate	30% (2001)
Exports	\$ 13.1 billion
Imports	\$ 8.7 billion

Table 9:Libya economic information and population growth.

(Source: Libyan Foreign Investment Board)

In the late 1950s, the World Bank sent a team to assess the socio-economic situation of the country and her people. The team published its report in early 1960, concluding that:

'Libyans live a very simple life, their food is simple, their necessities are limited and their knowledge of twentieth-century technology very limited. The majority are farmers who consume most of their production. Their living quarters are very poor, and the majority live in shacks, hamlets or caves. They use donkeys, camels and horses for transportation'

The rapid growth of technology has led to an economy where competitive advantage is increasingly based on the successful application of knowledge (Lengnick-Hall and Lengnick-Hall, 1988). Knowledge, with its intangible aspects, is becoming a defining characteristic of economic activities, as opposed to tangibles such as goods, services or production processes. The rise of the knowledge economy has seen a proliferation of information and communication technologies, coupled with greater organisational complexity, the growth of virtual and global organisations and rapid change. This in turn requires drastic change within HRM to respond to changing demands of the knowledge economy.

The development of the Libyan economic, from the independent in 1951 until now, can be divided into four periods, which differ in respect to its policies:

- First period, before 1959: It was one of the poorest countries in the world. The population was engaged in agriculture and animal husbandry. The aid from the UN and other organisations helped the country to survive and overcome the economically severe years of the fifties.
- Second period, from 1959 until 1969: The economic situation had changed after the discovery of oil in 1959, the need for direct foreign subsidies declined as international oil companies began to invest in Libya. The investment in the oil industry brought surplus to the country's economy in general. The Libyan economic system was mainly capitalist. Private ownership existed with minimum governmental interference. Public ownership was in sectors that required large-scale investment.
- Third period, from the revolution in Libya in 1969 until 1986: The country has changed from capitalism to socialism. State intervention in the economy has increased and the government started expanding the public sector and cutting back the private sector. The State ownership structure of businesses started in early 1970s and reached its peak in 1980s where most of the businesses became owner or controlled by the State. The State became to dominate all the economic activities.
- Fourth period, from 1987: Mainly due to the crises the Libyan economy had faced in the late 1980s as economic conditions and standards of

living worsened as world oil prices slumped. In response to these crises, the State introduced a series of liberalisation measures included a significant role for the private sector. The basis of the National Economy General Policy aims to treat many negative aspects and needs from which the Libyan Economy suffers. Also to restructure the economic sectors to allow expanding the base of ownership and allow direct participation of citizens in economic activities. Therefore, the Libyan government issued a number of legislations, which will regulate the economic operation in Libya, to encourage and strengthen the role of the national sector in individual and corporate forms, companies and family activities. This started by unifying the exchange rate, which stopped the parallel market and smuggling of currency and some private companies have emerged and started to operate.

In June (2003), Col. Moamar al Qadhafi (Leader of Libyan Revolution), in a speech to The Libyan People's General Conference "Libyan parliament", called for the wholesale privatisation of the country's vital oil and other industries, which were nationalised when he was in power from 1969. After that, in October 2003, The Libyan government announced its intention to privatise 361 plants in the industrial and agricultural sectors. The ownership of 261 factories will be transferred from the public sector to the private one immediately. Libya, as one of developing countries, has made remarkable strides towards economic reforms and is courageously facing the new trends of change and involvement in the global economy. It is now make many steps to privatise state-owned enterprises in addition to boosting the establishment of private companies, and trying to increase its attractiveness to foreign investors. On the other hand, building a liberal economy requires fulfilling some major conditions that are necessary for its proper operation.

The non-oil manufacturing and construction sectors, which account for about 20% of GDP, have expanded from processing mostly agricultural products to include the production of petrochemicals, iron, steel, and aluminium. The more popular craft items are carpets, pottery, leather goods, fabrics, and copperware.

According to the reports of General Peoples Committee for Economy and Commerce, it was important to reconsider the economic policies in Libya. A group of reformative programs have been prepared to transfer the economy to a better situation by allowing freedom and liberation of trade and services and participation of the private sector to gain confidence for performing the major role in the national economy. Estimates of the International Information Centre indicate that Libya will be a promising country / State for investment and transit trade in the following fields:

- Mapping, planning and studies required for infrastructure, being in pressing need for the services of international companies and offices specialized in the various fields.
- Construction of airports and seaport and development and operation of the existent airports and seaports.
- Construction of roads, bridges, railways and light metro systems.
- Construction and development of power plants.
- Mapping and construction of industrial complexes and cities with integrated services and utilities (450 industrial zones).
- Planning and construction of free commercial and industrial zones in Tobruk, Zuwara, Ghat, Nalut, Kufra, Qatrun and Sirte.
- Planning study and construction of projects for oil, gas and petrochemical industries.
- Planning, study and construction of projects for building materials and glass industries.
- Planning, study and construction of tourist projects (tourist resorts, villages and hotels). Libya needs provision of about 50-100,000 beds in Tripoli, Tajura, Sabratha, Khoms, Garabulli, Misurata. Sirte, Ghademes, Ghat, Germa, Sebha, Benghazi, Wahat (Oases), El-Marj, Derna, Shahat (Cyrene) and Gubba.
- Sale of the existing factories to national and foreign investors or participate in a part of their capital and redevelopment thereof.
- Libya stated stock exchange activity under care and supervision of Central Bank of Libya at present.

- Construction of integrated services medical cities / centres, offering projects for investment and operation by investment companies specialized in the medical treatment field.
- Libya is in process of introducing supplementary and assemblage industries, offering international investments and companies, as well as construction of industrial complexes for export to African markets and neighbouring countries.
- Offering for foreign investment, construction and operation of international transit airport and international aviation information Centre.
- Offering construction of international roads for connecting Libya with the countries located south of Libya (Sudan, Chad and Niger).
- Offering for foreign investment, model agricultural projects for utilizing the Great Man-Made River water.
- Offering for foreign investment project in the field of animal wealth (breeding and improvement of breeds).
- Offering for foreign investment project in marine wealth (fishing, canning and export).
- Offering for foreign investment construction of 35 Administrative complexes for Secretariats, bodies, institutions, companies and Banks for providing Administrative Offices to 10,000 institutions during 2005 to 2010.
- Libya is in process of updating electronic management systems. The international companies specialized in planning, study, construction, training and maintenance proposals to General Peoples Committee in the Jamahiriya (as per the method adopted in certain advanced countries, e.g. The United Emirates State (Electronic Government)).
- Libya is in process of restructuring the Banking sector under Agreement, as well as upgrading Banking services by using information technology, electronic mechanization and credit cards internationally and abroad.
- Libya is in process of privatization of the State-owned Commercial Banks, and offering their shares for sale and circulation after evaluation of their assets.

- Libya is in process of introducing the program for transfer of currency in one minute (Western Union). The International companies are invited to submit offers to Tourist Development Bank, a Bank under establishment and participation, the capital of General Posts and Telecommunications Company.
- Libya is giving due attention to human resources. It is envisaged to send 10,000 Libyans for study abroad in various specializations for obtaining M. Sc and Ph. D Degree, within the scope of development of human cadres and upgrading the educational and qualification structure.
- Libya is in the process of restructuring education and training sector, and introducing information technology and foreign languages in the study curricula, and opening the field to the private sector for investment in the field of education, and introducing foreign universities and faculties program and diversification of specializations.
- Offering for investment construction of projects for processing of wastes and garbage in 30 areas in Libya, as well as medium projects related to environment and atmosphere.

The reports of National Authority for Information and Documentation indicate that Libya is in need for construction of 405,000 housing units by 2010. Actually, the Secretary of General People's Committee announced laying the cornerstone for construction of 50,000 housing units on an area of 750 hectares in Tajura area adjacent to Tripoli City.

4.8 Education and training for human development in Libyan

El-Mahdi (1996) stated that:

"The importance of human resource development came about because of its role in facilitating the social and economic development process. People are the target of this process on the one hand, and they are the basic factor in the planning and achievement of its objectives on the other"

The process of human resources development must be thought about as an element of the economic development programme. This process which includes education and training programs can provide employment opportunities for increasing national manpower. Consequently, serious efforts should be made in order to create the quantity and quality educated and trained workers. Agnaia (1996) stated that:

"Training means preparing, and qualifying individuals by providing them with necessary skills and knowledge, and by altering their attitudes in different activities in order to promote their productivity and to cover quantity and quality shortages which contribute towards achieving the goals of development plans"

According to Al-Zawie (1991), between 1994 and 1999 United Nation Development Programme (UNDP) planned to work with vocational training authorities in Libya, and it is currently supporting the efforts by the country to upgrade the standards of the secondary school system. Responding to the national needs, UNDP (2000) is developing a series of activities in coordination with national authorities and partners, as follows:

- 1) A project which would help upgrades and develop the vocational training system of the country, and which would be executed through a specialized agency of the UN System, the International Labour Organisation (ILO).
- 2) A proposal of development for human resources for education and health sectors, through training and institutional capacity building.

The education plan in Libya is considered as the source of trained manpower needed to carry out the objectives of development. The objectives set up in the educational plan were defined as follows:

- 1) To prepare the citizens in order for them to play a part as a good members of a modern society.
- 2) To give every child, as far as possible, the opportunity of education in the elementary stage, this is the minimum requirement for a literate citizen.
- 3) To raise the standard of education.

- 4) To diversify educational programmes so as to enable students to choose the subjects which are most suitable to their aptitudes and talents?
- 5) To coordinate the educational programmes with the requirements of the various fields of human activities.

The general policy of education, as set up by education plan is defined to comprise the following:

- 1) Increasing the number of students attending universities and vocational institutions in order to graduate sufficient numbers needed to fill the technical manpower gaps.
- 2) Rural communities will continue to form the backbone of the Libyan economy and foundation of the new life.
- 3) Providing adequate educational facilities which assist in raising the standard of education.

Libyan education systems training programmes are responsible for prepare people to take a part in the economic development, particularly, in the public enterprises. In fact, the education condition of the country was as poor and under developed as its economy. In 1954, it was estimated that 81.1% of the total Libyan population was illiterate. The rate of illiteracy was higher among the women population, 90.1%, than among men, 72.1%, and was as a result of the country's economic situation, (United Nation development report).

4.9 Libyan construction industry

In developing countries, the major keys to social and economic development lie on modifying the conditions of the people and their life style. For example, if agriculture is to be improved, if industry needs to be established, if isolated regions are to be linked together and with major cities and towns, people must have opportunities to learn and the right to be educated. The many government-sponsored construction projects of the 1970s created a booming industry, so much so that by the end of the decade Libya had become the world's leading per capita consumer of cement. This was a significant economic achievement, particularly because the 1978 housing law effectively had eliminated private

residential construction. In 1986 construction supplied about 11 percent of GDP, second only to public services in the non- petroleum sector (PROJEX LIBYA 2007).

Libya's economic progress is dependent on overseas technology and expertise for the expansion, upgrading and modernisation of its vital infrastructure. This is central to an ambitious multi-billion dollar National Development Plan which has a US\$14 billion allocation for 2007 alone, representing 60% of the total annual budget. The Plan focuses on: housing - 50,000 units a year are needed to keep pace with the growing population; the construction and equipping of schools and hospitals; road and bridge building including 2,000kms of road improvements; water and sewerage projects – US\$6 billion has been allocated to waste water systems and management; the renovation and construction of airports - a new terminal at Tripoli International Airport and the construction of a new airport in Benghazi are a priority. All this activity will put increased demands on the power sector which is set to double in terms of output from 4,700MW to 9,700MW within the next five years at a projected cost of US\$7.5 billion (PROJEX LIBYA 2007). In addition, the relevance of total quality management (TQM) elements managers as opposed to those perceived by Libyan project managers will help to identify from where leaders of construction industry could start to prioritise their decisions to prepare their managers for the future challenges of international construction and culture. This chapter highlighted the political, economical, social and cultural aspects of the Libyan society in which the case studies of this research have evolved and required to successfully implement a TQM programme.

4.11 Summary of the Libyan case study in context

This chapter summary found there are several processes at work to keep corporate culture stable and resistant to change. The change is people's behaviours and the significant culture change required to successfully implement a TQM programme. Generally, Libyan people have some knowledge about culture diversity, as Libya has been colonised by many countries with different cultures and beliefs, but this knowledge used in the normal life, while it

is not usable in the business. The Literature review chapter and the conceptual framework for of the impact of socio-economic influences on the TQM of the Libyan construction industry highlighted the political, economical, social and cultural aspects of the Libyan society in which the case studies of this research have evolved. These kind of social relations have a negative impact on implementing of TQM in the Libyan organisations through putting of minor focus on appointing of general and middle managers, first-line and employees positions on qualification and experience. The investigation has been carried out in this chapter to lay a foundation for a better discussion of the findings of this research the impact of socio-economic influences on the TQM of the Libyan construction industry.

Chapter 5 –Finding and analysis

5.0 Introduction

The findings from the case studies of companies A&B will be presented in relation to the aims and objectives as set out in chapter one of this research. Appendix (II) shows the questionnaire questions, for different organisational levels in every case study. In order to present and analyse the findings that emerged from the collected quantitative and qualitative data, an analytical framework will be used. Also, the researcher conducted some interviews (appendix II) in this chapter, the researcher displays only the research findings and accordingly the in-depth discussion and implications will be in chapter six. The questionnaires on TQM dimensions were grouped into two parts: part one understanding and knowledge of TQM barriers. And part two; organisational culture barriers, internal and external barriers, non technical barriers, and technical barriers. Both groups supported with interview. The four levels questionnaire in every case study was as follows:

- Top management.
- Middle management.
- First-line managers.
- Employees.

5.1 Company sample demographics

The field survey included a total of 223 respondents representing different functional levels in company (A) the respondent's presented in table (5.1). The field survey included a total of 96 respondents representing different functional levels in company (B).

	Company A		Company B	
Occupational levels	N	%	N	%
Top managers	6	3	3	3
Middle managers	15	7	9	9
First – line managers	22	10	11	12
Employees	180	80	73	76
Total	223	100	96	100

Table 10 - Survey demographics

(source: Author)

5.2 Questionnaire Survey

From the literature review, has derived the barriers that affect the implementation of TQM in the case study companies A&B. These barriers are in two parts:

5.2.1 Part One: Knowledge and understanding the concepts of TQM

Knowledge and understanding of TQM

- Q1 Most employees in your company have a full knowledge and understanding of the concept of TQM.
- Q2 Some TQM Concepts have been implemented within departments of your company

The Internal and External Customer concept

- Q3 Employees at different levels and departments are aware of the internal and external customer concept
- Q4 Each employee in your companies treats colleagues as customers.

The Team Work Concept (TW)

- Q5 The significance of the teamwork concept according to Occupation Levels

- Q6 Libyan Construction Company identifies gaps between its Training and TQM need.
- Q7 The Training session of Libyan construction company personnel to work in Team
- Q8 In Libyan Construction Company there are many cross-functional teams solving quality problem.
- Q9 Top management of Libyan Construction Company regards team spirit as an important factor for improvement and encourages the employees to work in team

Quality through People (QTP)

- Q10 The significance of Quality through People concept according to Occupation Levels
- Q11 Within Libyan Construction Company the employees are encouraged to play an important role in improving the TQM.

Management commitment (MC)

- Q12 The Significance of Management Commitment concept According to Occupation Levels
- Q13 The senior managers of Libyan Construction Company listen to the voice of employees when they raise matters related to quality improvement and show visible commitment and take ownership of the improvement processes.

5.2.2 Part Two: Barriers

The questionnaire (See the Appendix II)

- Internal and External Barriers
- Non technical barriers
- Technical barriers
- Organisational culture barriers

Lack of the government in the public sector, which is related to the barriers above. The study of TQM implementation in public sector organisations in Libya

cannot be properly carried out without an understanding of the governmental and its surrounding environmental impact on the implementation of the system.

5.2.1 Part One: Knowledge and Understanding the Concept of TQM

The researchers will find answers for the following question

How well understood is the philosophy of TQM in Libyan Construction Companies? This research aim to identify and critically evaluate the barriers affecting TQM within construction management practices in Libya

Knowledge and understanding of TQM

Knowledge of TQM and implementation in section of the questionnaire the Libyan construction (A&B) the respondent were presented with the statement that "most employees have a full knowledge and understanding of the concepts of TQM the extent to which the respondents agreed with this statement is shown in table 11 and 12.

Q 1- Most of the employees in your company have a full knowledge and under standing of the concept of TQM

	Agree	Neutral	Disagree	Total
Top Managers	1	2	3	6
Middle Managers	2	5	8	15
First - Line Managers	5	5	12	22
Employees	30	40	110	180
Total	38	52	133	223

Table 11 – Company A responses to survey Part One Q1

(Source: Author)

	Agree	Neutral	Disagree	Total
Top Managers	0	1	2	3
Middle Managers	1	3	5	9
First - Line Managers	2	2	7	11
Employees	13	17	43	73
Total	16	23	57	96

Table 12 – Company B responses to survey Part One Q1

(Source: Author)

Figures 12 and 13 show that a small percentage of respondents were of the opinion that they had full knowledge and understand of TQM. The majority of respondents either disagreed or were neutral as to whether or not the employees in Libyan construction had a full knowledge of TQM.

The results in figure 12 also show that the first line managers in company A agreed with the statement to a higher extent than the other groups, which suggests that they have a better understanding of TQM than the other groups. However the results of rating the statement indicate that a small percentage of the respondents have an understanding of TQM.

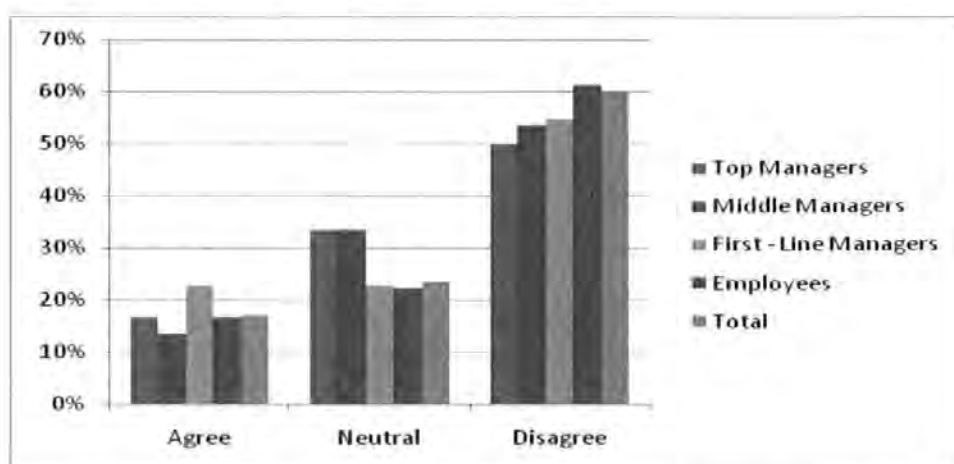


Figure 12 – Company A histogram of results to survey Part One Q1

(Source: Author)

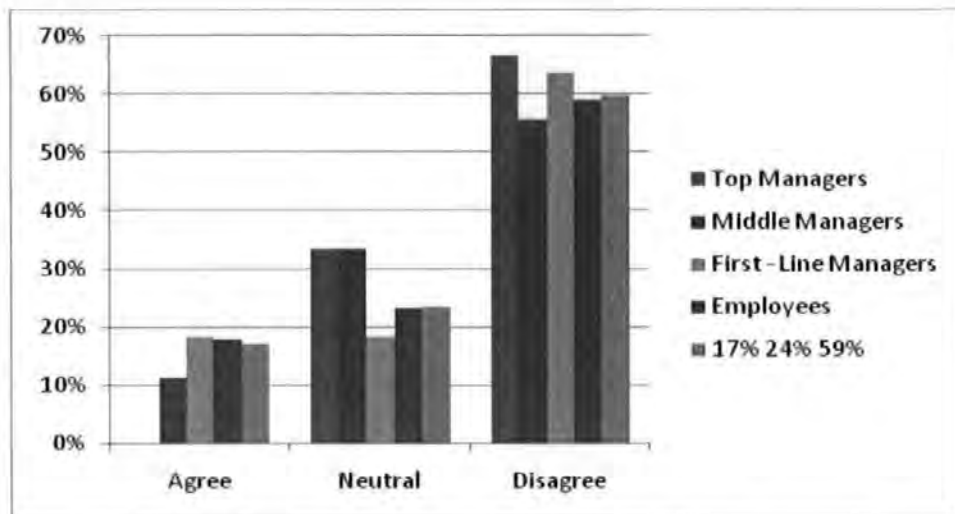


Figure 13 – Company B histogram of results to survey Part One Q1

(Source: Author)

Overall, Figure 14 shows a strong correlation between Company A and B, which suggests that to change this situation would require the creation of awareness amongst the personnel of Libyan constructions about what TQM stands for, and how its methods, if implemented appropriately, could lead to an overall improvement in the services and management processes of the organisation. As a result, it is necessary, before implemented the proposed models to make the Libyan construction's employees aware of TQM and its concepts and methods.

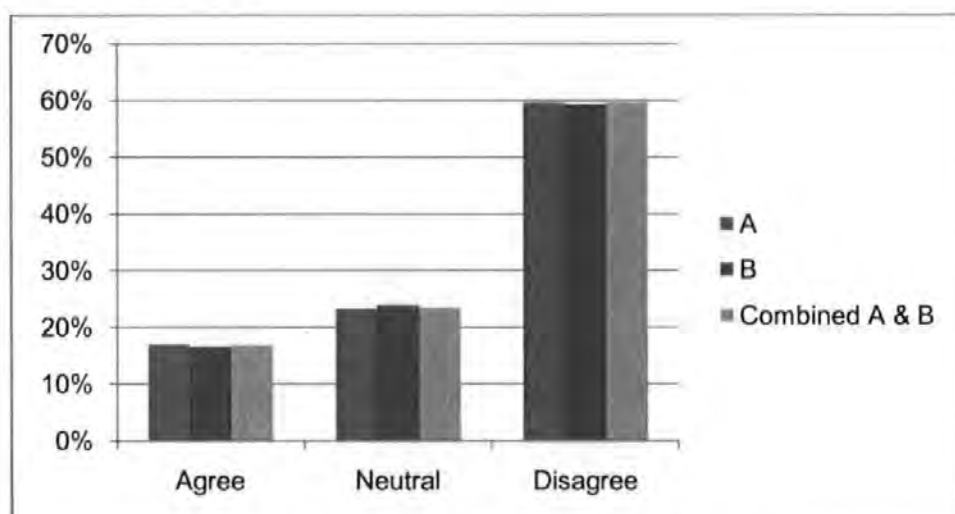


Figure 14 – Combined Results for survey Part One Q1

(Source: Author)

Q2-Some TQM Concepts have been implemented within your company departments.

The results of the extent to which the respondents agreed with the statement are provided in Table 13 and 14 and indicate that none of the respondents agreed with the statement whilst all the respondents either disagreed or were neutral about whether or not that TQM or its concepts have been implemented in Libyan construction's department.

	Agree	Neutral	Disagree	Total
Top Managers	0	1	5	6
Middle Managers	0	9	6	15
First - Line Managers	0	16	6	22
Employees	0	139	41	180
Total	0	165	58	223

Table 13 – Company A responses to survey Part One Q2

(Source: Author)

	Agree	Neutral	Disagree	Total
Top Managers	0	1	2	3
Middle Managers	0	6	3	9
First - Line Managers	0	8	3	11
Employees	0	56	17	73
Total	0	71	25	96

Table 14 – Company B responses to survey Part One Q2

(Source: Author)

In figures 15 and 16 the relative proportions of the answers to Q2 are illustrated. The results show that the first line managers and employees were more neutral

than the other groups of respondents about the statement and that the top managers disagreed with the statement to a higher extent than the other groups. The results provide an indication that the concepts of TQM have not been implemented in Libyan construction's levels. And the knowledge of middle and first –line managers and employees about the implementation TQM is low whilst top management has understood that TQM has not been fully implemented in Libyan construction company.

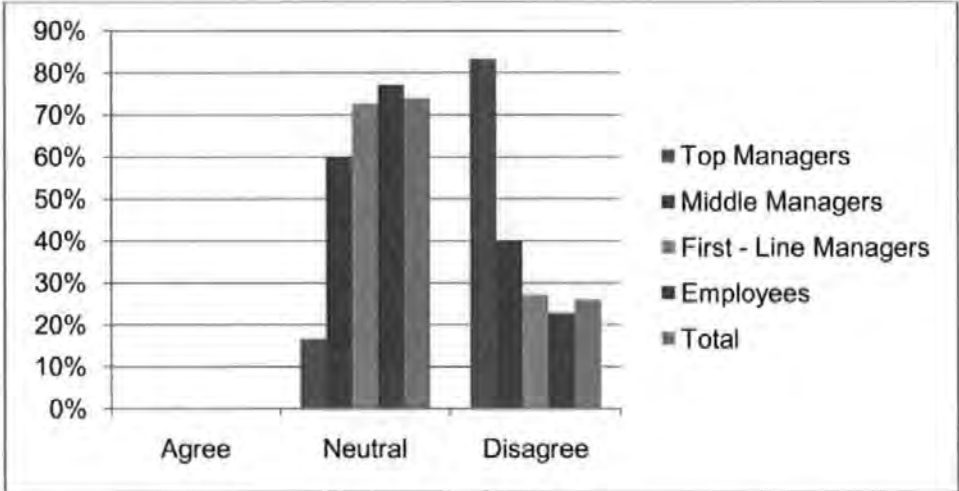


Figure 15 – Company Histogram of results for survey Part One Q2
(Source: Author)

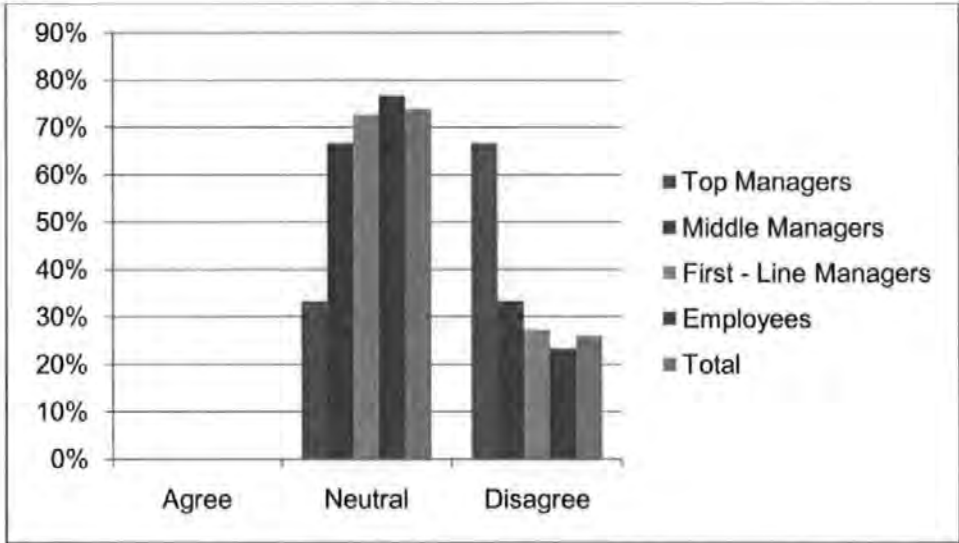


Figure 16 – Company B Histogram of results for survey Part One Q2
(Source: Author)

From the analysis of the combined responses (figure 17) the respondents stating that TQM has never been a subject that has been seriously addressed by Libyan Construction Company apart from some training that was provided to senior management. No strategy for implementing TQM principles was ever adopted, perhaps Libyan construction company doesn't know how to go about it; it needs a helping hand to understanding from the top management and then to all the levels. However the results obviously indicate that the concepts of TQM in general, the principles and elements of the proposed model, will be novel and first occasion to implement TQM in Libyan Construction Company.

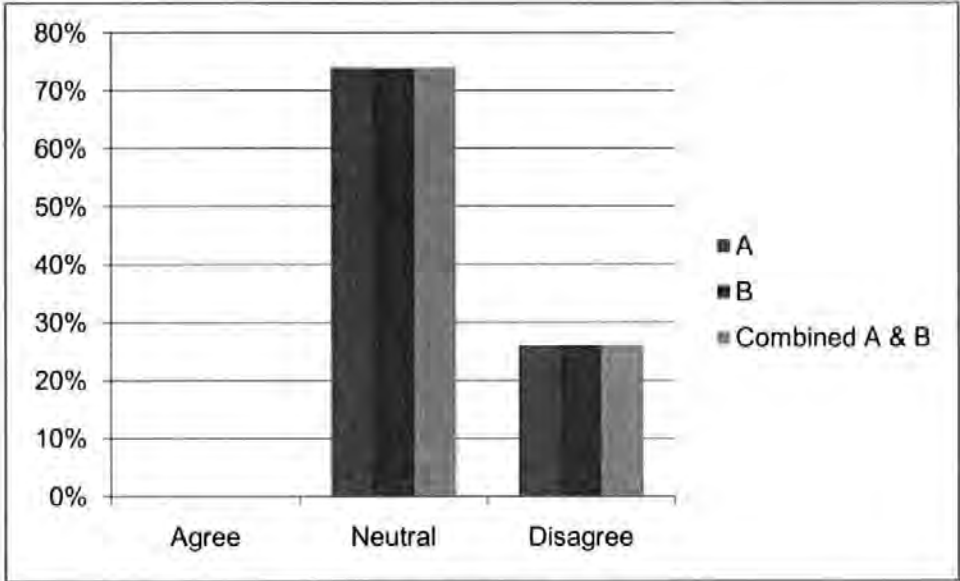


Figure 17 – Combined results for survey Part One Q2

(Source: Author)

One important distinction from the results is how significantly the views of top managers differ from the other respondents (see figure 18). The top managers have views that are directly opposite those of lower levels of managers and employees, suggesting a serious disconnection between top managers and the rest of the company workers.

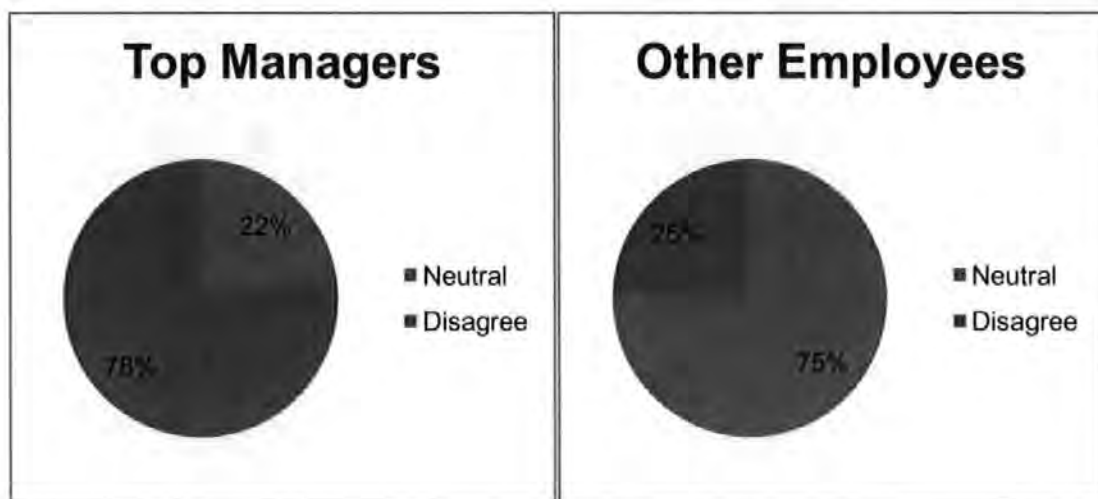


Figure 18 – The contrast between Top Manager responses to survey Part One Q2 and other respondents

(Source: Author)

The Internal and External Customer concept

The next two questions of the survey Part One explored the internal and external customer concept

Q 3 - Employees at different levels and departments of your company are aware of the internal and external customer concept

The responses for both companies A and B show that the majority of respondents found it to be as most significant (see Tables 15 and16).

	Most Significance	Significance	Less Significance	Not Significance	Total
Top Managers	6	0	0	0	6
Middle Managers	6	7	1	1	15
First - Line Managers	18	4	0	0	22
Employees	101	71	8	0	180
Total	131	82	9	1	223

Table 15 – Company A responses to survey Part One Q3

(Source: Author)

	Most Significance	Significance	Less Significance	Not Significance	Total
Top Managers	3	0	0	0	3
Middle Managers	4	4	1	0	9
First - Line Managers	9	2	0	0	11
Employees	40	28	5	0	73
Total	56	34	6	0	96

Table 16 – Company B responses to survey Part One Q3

(Source: Author)

Figures 19 and 20 reveal that a small percentage of respondents rated it as less significant. Only a very small percentage of respondents rated the concept as not significant. The results also show that none of the top and first-line managers rated the element as less significant and not significant. A small percentage of middle managers and employees rated it as less significant and not significant.

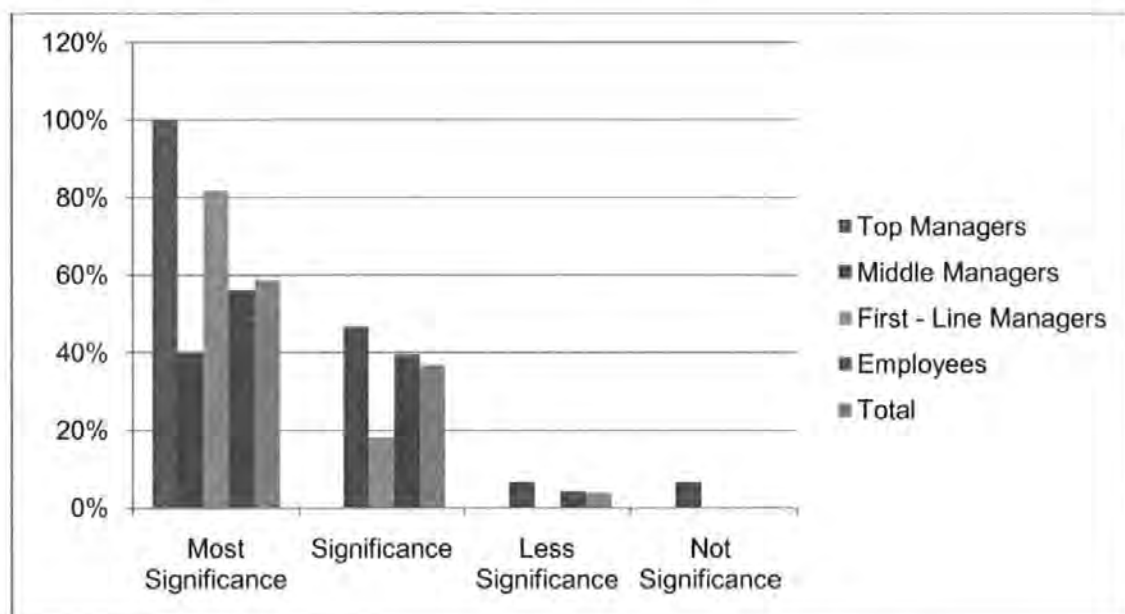


Figure 19 – Company A results for survey Part One Q3

(Source: Author)

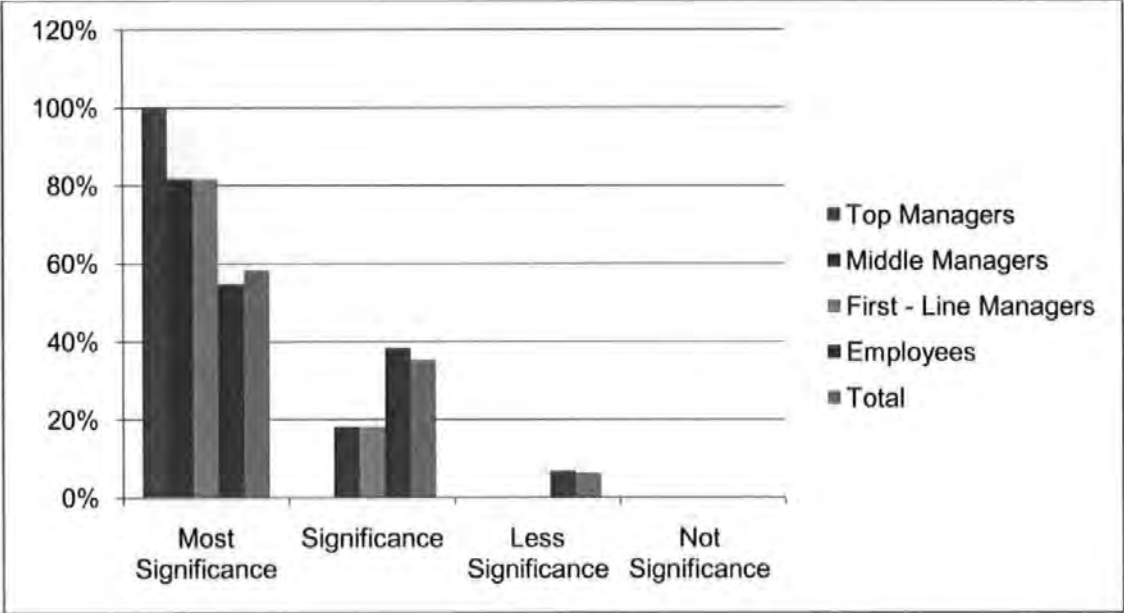


Figure 20 – Company B results for survey Part One Q3

(Source: Author)

When assessed collectively (figure 21) the results show a strong correlation between company A and company B and a strong level of agreement that the internal and external customer concept is significant.

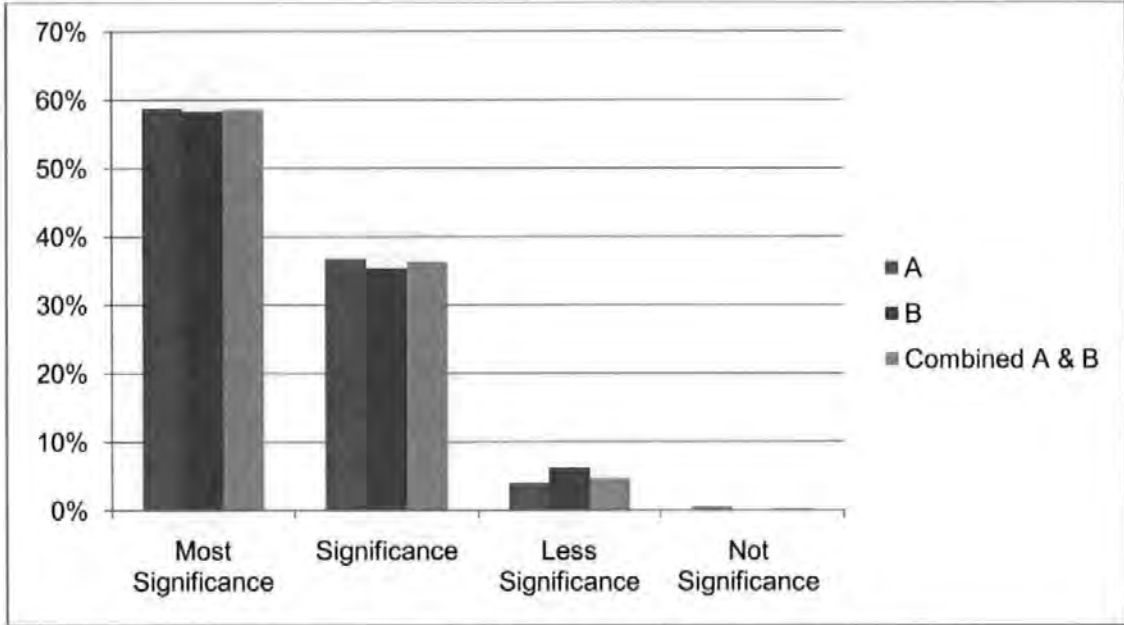


Figure 21 – Combined results for survey Part One Q3

(Source: Author)

Q 4 – Each employee in your company treats colleagues as customers.

The results to Q4 show that the top managers were of the opinion, to a higher extent than the other in order to embrace the concept of colleagues as customers (see table 17).

Company	A	B	A and B
Agree	82	35	117
Neutral	57	25	82
Disagree	84	36	120
Total	223	96	319

Table 17 – Company A and B responses to survey Part One Q4

(Source: Author)

The majority of respondents were neutral or disagreed with the statement (see figure 22). The relatively low percentage of the respondents agreeing with the statement provides a finding that neither company A nor company B treat or regard colleagues as customers.

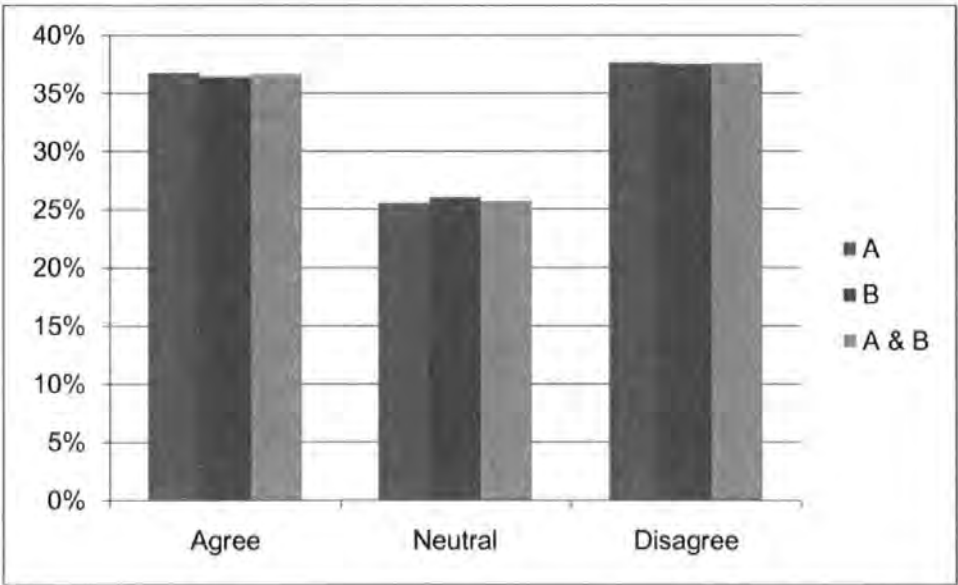


Figure 22 – Combined results for survey Part One Q4

(Source: Author)

The Team Work Concept

The next five questions were designed to explore the team work concept within the sample companies.

Q 5 - The significance of the teamwork concept according to Occupation Levels

Tables 18 and 19 show the results of examining the significance of the teamwork concepts. The majority of respondents rated the concept as most significant and significant. Only a small percentage of respondents rated the concept as less significant and not significant.

	Most Significance	Significance	Less Significance	Not Significance	Total
Top Managers	5	1	0	0	6
Middle Managers	12	3	0	0	15
First - Line Managers	16	5	1	0	22
Employees	142	36	0	2	180
Total	175	45	1	2	223

Table 18 – Company A responses for survey Part One Q5

(Source: Author)

	Most Significance	Significance	Less Significance	Not Significance	Total
Top Managers	2	1	0	0	3
Middle Managers	7	2	0	0	9
First - Line Managers	7	3	1	0	11
Employees	46	26	0	1	73
Total	62	32	1	1	96

Table 19 – Company B responses to survey Part One Q5

(Source: Author)

The finding presented in figures 24 and 24 indicate that all of the top and middle managers rated the concepts as most significant the first – line managers and employees also rated the concepts as most significant and significant to a high extent, but a small percentage of them rated it as less significant and a very small percentage of employees rated the it as not significant. The results show that all levels recognized the significance of concepts.

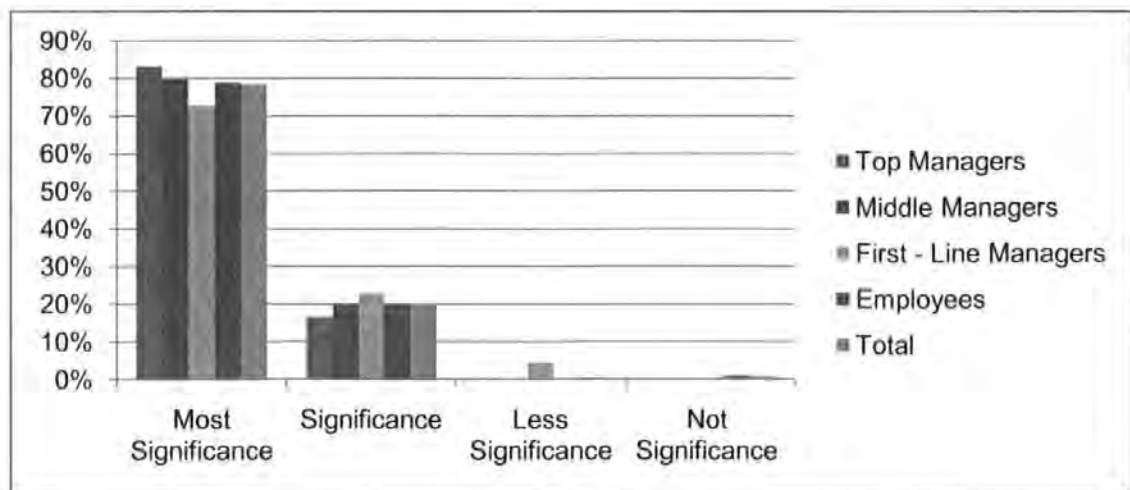


Figure 23 – Company A results to survey Part One Q5

(Source: Author)

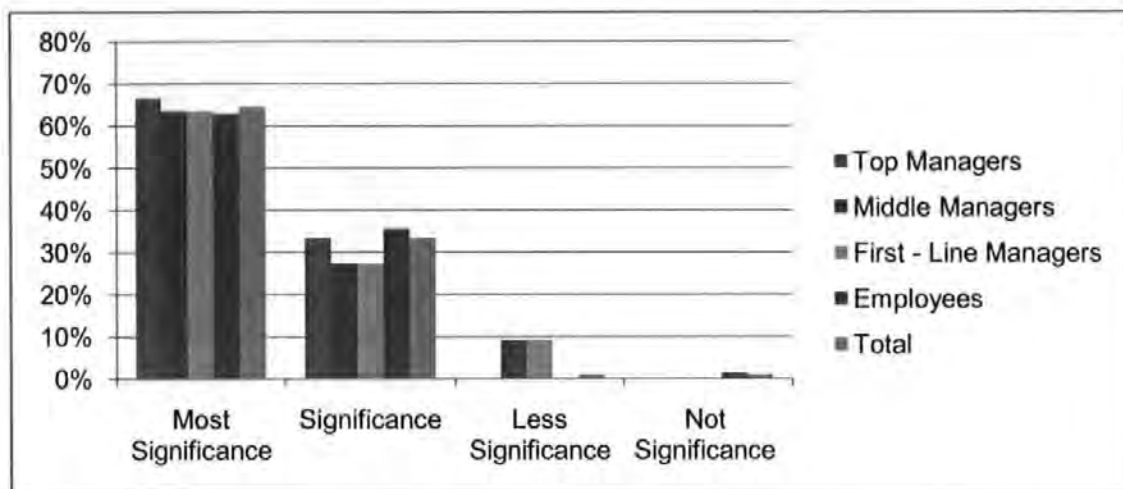


Figure 24 – Company B results to survey Part One Q5

(Source: Author)

When combined (figure 25) the results show small difference between company A and company B, with company A respondents rating the significance of the team working concept most highly.

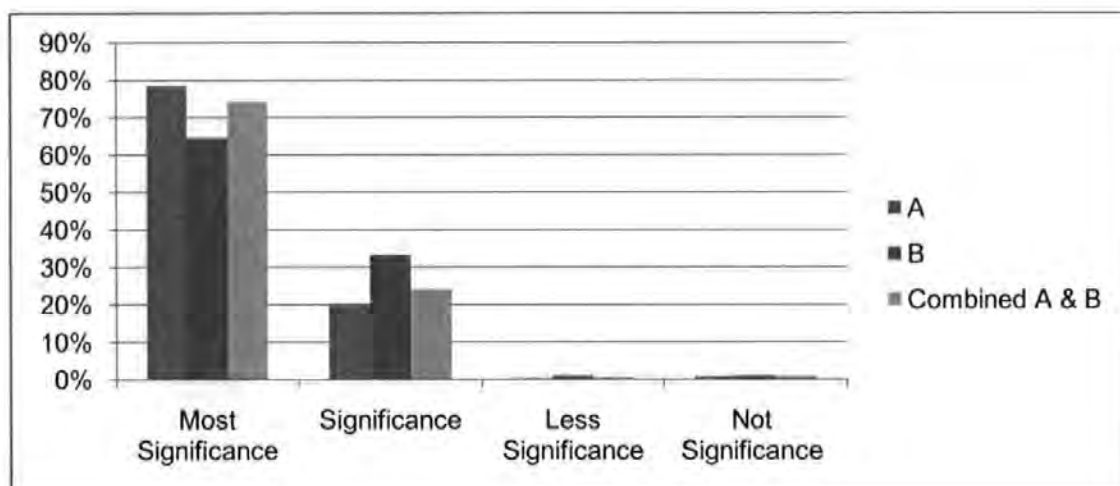


Figure 25 – Combined results for survey Part One Q5

(Source: Author)

The next four questions dealt with various aspects of the team working concept.

Q6- your company identifies gaps between its Training and TQM need?

Q7 - the Training session in your company personnel to work in Team?

Q8- In your company there is many cross-functional teams solving quality problem?

Q9 - Top management in your company regards team spirit an important factors for improving and encourages the staff to work in team.

The responses are presented collectively in tables 20 and 21

	Q6	Q7	Q8	Q9
Agree	140	101	100	90
Neutral	42	68	60	60
Disagree	41	54	63	73
Total	223	223	223	223

Table 20 – Company A responses to survey Part One Q6-9

(Source: Author)

	Q6	Q7	Q8	Q9
Agree	60	43	43	39
Neutral	18	29	26	26
Disagree	18	24	27	31
Total	96	96	96	96

Table 21 – Company B responses to survey Part One Q6-9

(Source: Author)

In relation to Q6, A small percentage (18%) of respondents agreed, were neutral (19%) and the majority of them disagrees (63%). From the results for both companies (A and B) that there are no cross-functional team in Libyan Construction Company intended to solve quality problem and plan to improve services quality as seen in the top and middle managers (figures 26 and 27).

The results for Q7 show that in both company (A and B) less than half of the respondents agreed (45%) with the statement. The results show that more than half of respondents were neutral (30%) and disagreed with the question (24%).

The first line managers and employees were inclined to agree with question than were top and middle managers this could be due to the fact that either they intended to show or that they are prepared to work in team (figures 26 and27).

Q8 was designed is to see whether Libyan companies identify gaps between their current training and TQM training needs. The high percentage of the first-line managers and employees agreeing with the question could be due to the fact that they may suppose that Libyan Construction Company should know and identify the gaps between its current and TQM training needs(figures 26 and27).

Q9 revealed a low percentage of respondents in agreement with the question (40%) and neutral were (27%) disagreed (33%) (figures 26 and27).

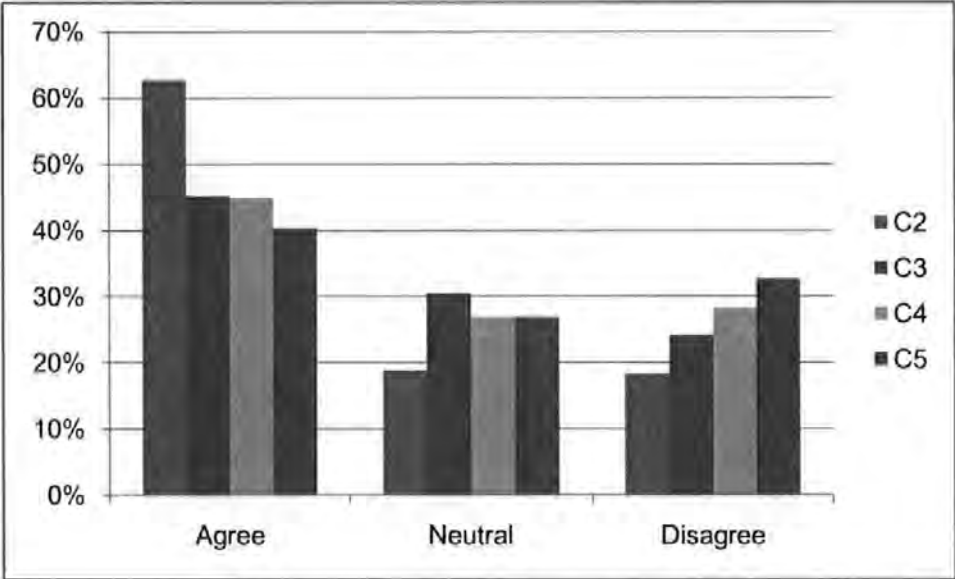


Figure 26 – Company A results for survey Part One Q6-9

(Source: Author)

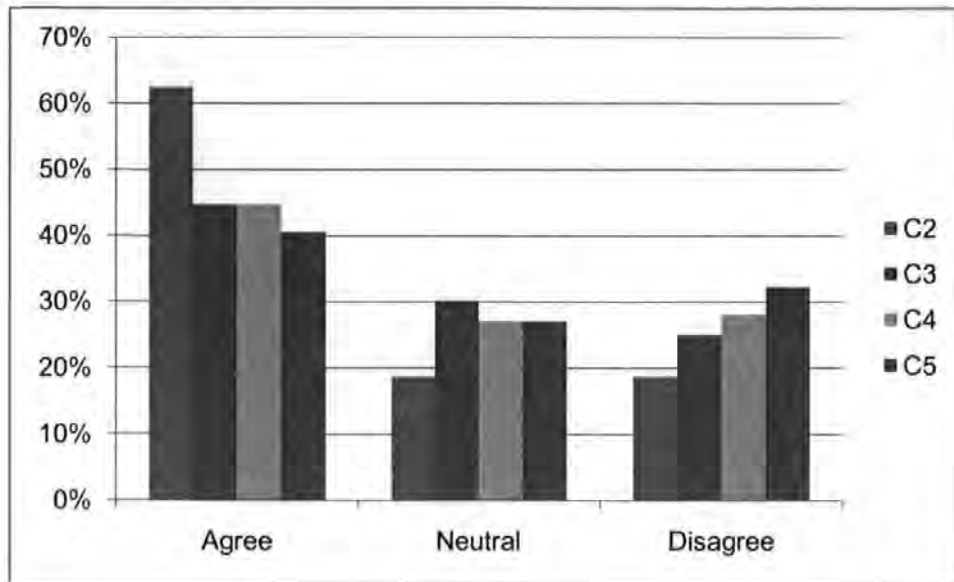


Figure 27 – Company B results for survey Part One Q6-9

(Source: Author)

Overall top managers agreed with the questions to a lesser extent than the other groups, which indicates that Libyan companies do not identify and train their best people to work as a team. Such human resource practices include training and altered compensation. Formal training can be used to give employees the specific skills needed to work effectively in teams and to apply complex analytic techniques. Moreover Libyan company does not identify TQM requires alterations in the organisation of work to empower employees to participate in front-line decision making and to facilitate co-operation through teamwork structures and suggestion systems. According to Deming (1986) stated teamwork in a quality organisation must be based on commitment to the customer and to continuous improvement; and team leaders must have the ability to motivate team members in ways to meet these objectives. Libyan company to solve or investigate cross-functional problems or improvement opportunities associated with many functions or departments as seen must of them agreed for the top management delegates the team and is therefore committed to assigning it sufficient resources. Through cross-functional teams, different people from different departments work together and learn from each other. Thus, problems can be easily solved. Cross-functional teams are effective in solving cross-functional problems.

Quality through People (QTP)

Q10 - The significance of Quality through People concept according to Occupation Levels

	Most Significance	Significance	Less Significance	Not Significance	Total
Top Managers	4	2	0	0	6
Middle Managers	7	4	3	1	15
First - Line Managers	13	6	3	0	22
Employees	79	67	25	9	180
Total	103	79	31	10	223

Table 22 – Company A responses to survey Part One Q10

(Source: Author)

	Most Significance	Significance	Less Significance	Not Significance	Total
Top Managers	2	1	0	0	3
Middle Managers	4	2	2	1	9
First - Line Managers	6	3	2	0	11
Employees	42	23	5	3	73
Total	54	29	9	4	96

Table 23 – Company B responses to survey Part One Q10

(Source: Author)

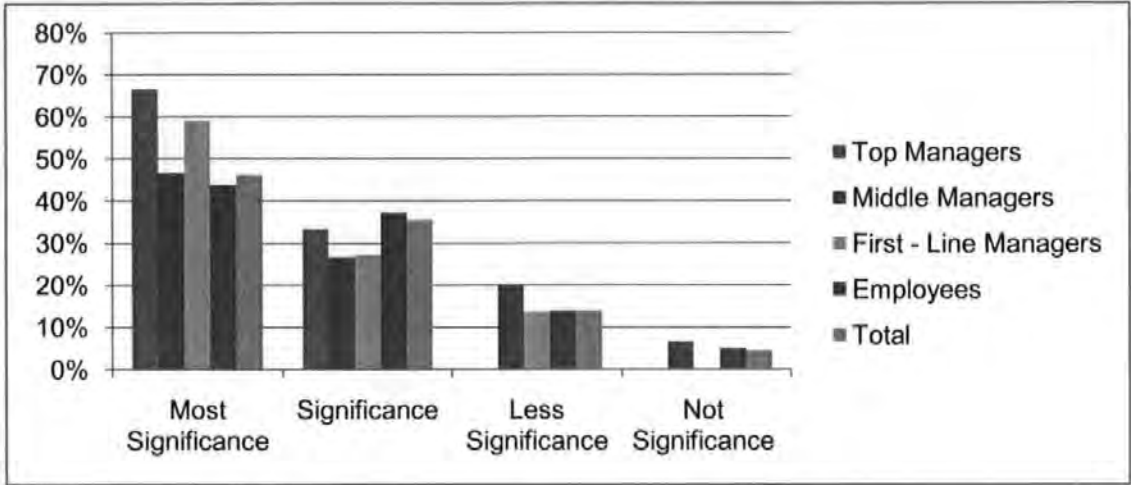


Figure 28 – Company A results for survey Part One Q10

(Source: Author)

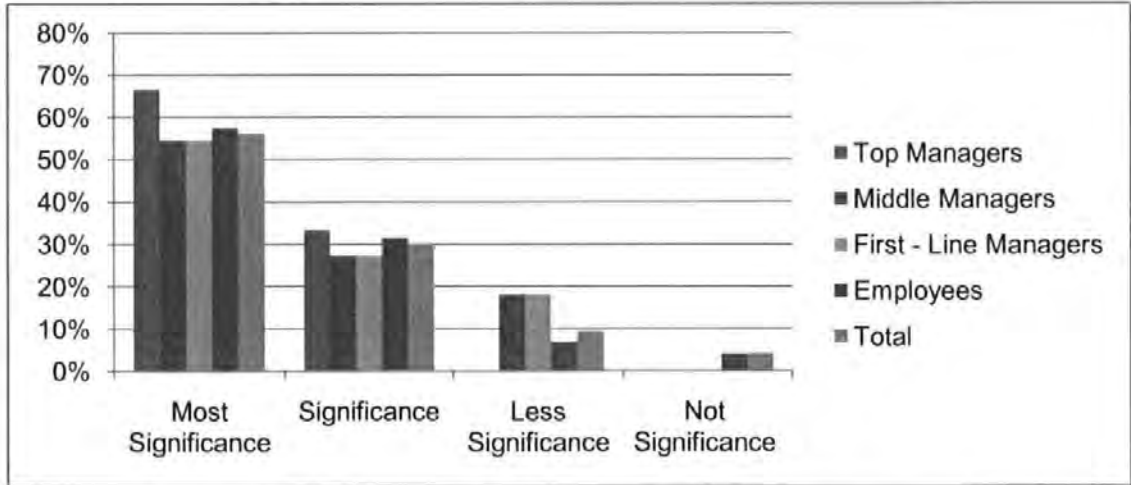


Figure 29 – Company B results for survey Part One Q10

(Source: Author)

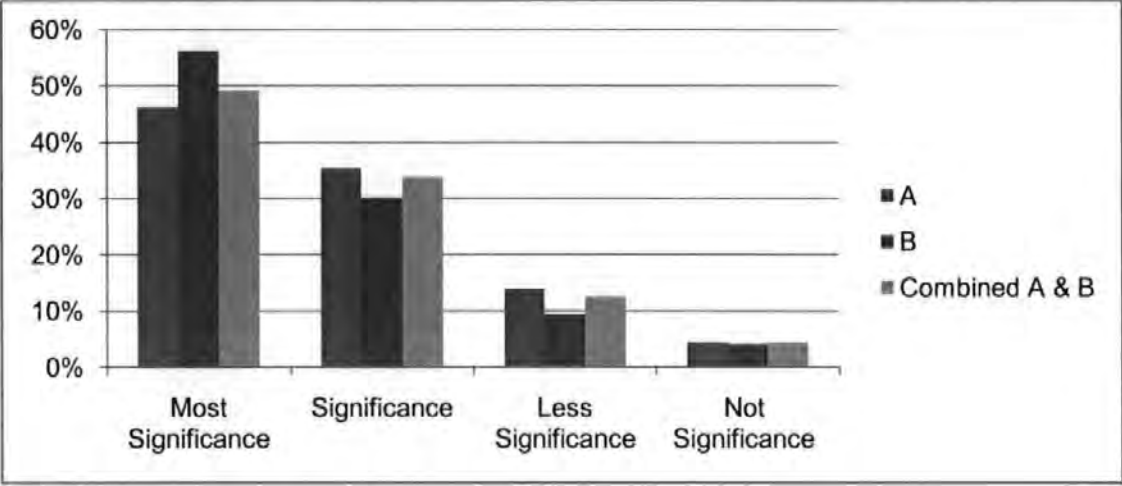


Figure 30 – Company B results for survey Part One Q10

(Source: Author)

Q 11- Within your company the staffs are encouraged to play an important role in improving the TQM?

Company	A	B	A and B
Agree	111	48	159
Neutral	44	19	63
Disagree	68	29	97
Total	223	96	319

Table 24 – Company A&B responses to survey Part One Q11

(Source: Author)

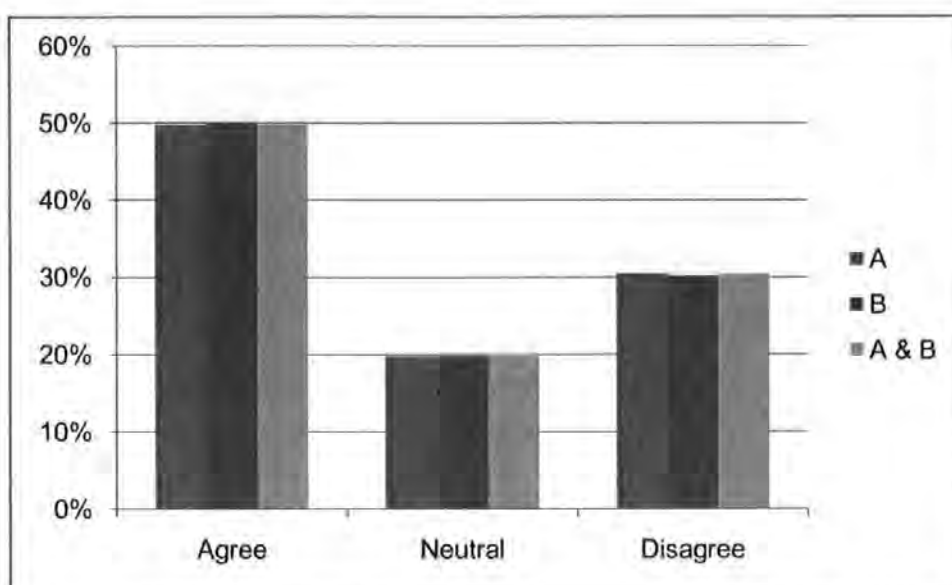


Figure 31 – Company A&B results for survey Part One Q11

(Source: Author)

The results of rating the significance of these concepts are provided in company (A and B) from table 24. Show that the majority of respondents rate the concepts as most significant and significant (49%). A small percentage of respondents rated the concepts as less significant (13%) and very small percentage of them rated it as not significant (4%).

The results show that the top managers are a higher extent than the other group and that no occupational levels rated it as less significant or not. The majority of them rated the concepts as significant (49%) whilst only a small percentage of middle managers and employees rated the principle as not significant (4%). These results gave that top managers have a greater awareness of the importance of people in achieving quality and improvement. To test the extent to which the importance of people is in practice. The results show that the majority of them agreed with the statement (50%) company A company B as seen in combined analysis (A and B). A low percentage of respondents were neutral (20%) and disagreed (30%) as seen in overall results table. The results provided that the middle managers agreed with the statement to a less extent than other occupational levels. As seen about half of the top managers agreed with the statement, but first-line managers and employees agreed with the statement to a greater extent than both the top and middle

managers. The finding in respect of the middle managers might suggest that they may felt that employees are not encouraged and given an important role in improving the quality or TQM programmed.

Management commitment (MC)

Q 12. The Significance of Management Commitment to TQM concept According to Occupation Levels.

	Most Significance	Significance	Less Significance	Not Significance	Total
Top Managers	5	1	0	0	6
Middle Managers	10	4	1	0	15
First - Line Managers	14	6	2	0	22
Employees	141	28	7	4	180
Total	170	39	10	4	223

Table 25 – Company A responses to survey Part One Q12

(Source: Author)

	Most Significance	Significance	Less Significance	Not Significance	Total
Top Managers	2	1	0	0	3
Middle Managers	6	2	1	0	9
First - Line Managers	7	3	1	0	11
Employees	57	13	2	1	73
Total	72	19	4	1	96

Table 26 – Company B responses to survey Part One Q12

(Source: Author)

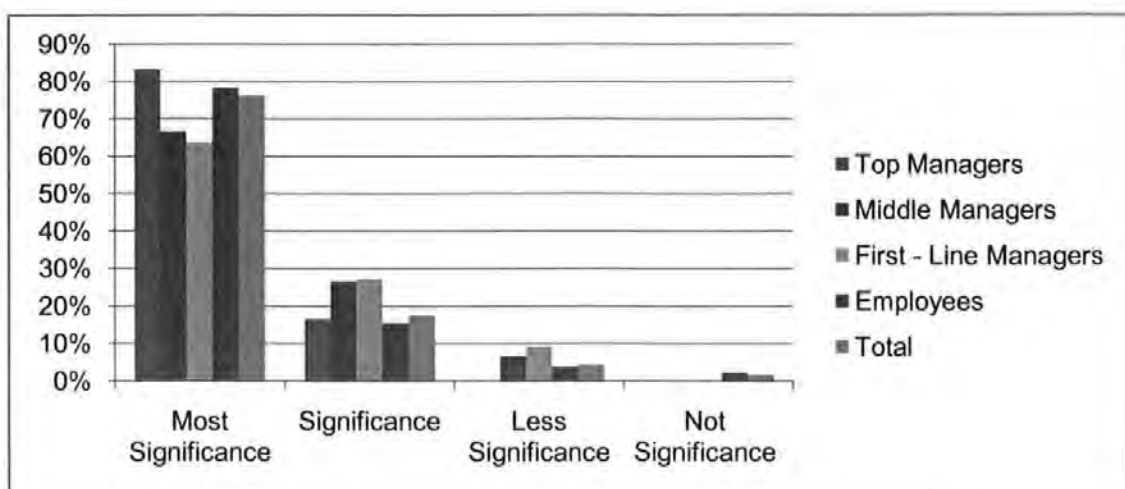


Figure 32 – Company A results for survey Part One Q12

(Source: Author)

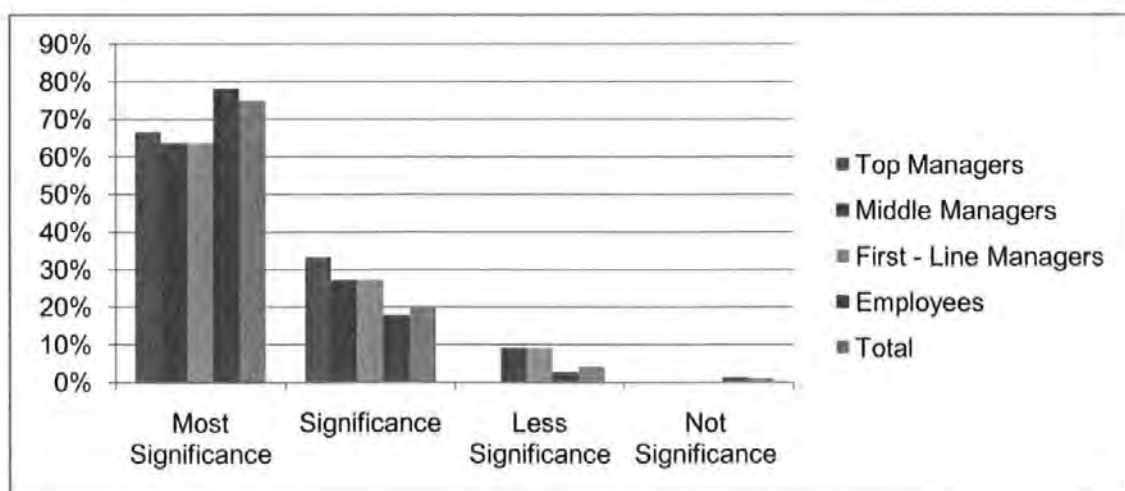


Figure 33 – Company B results for survey Part One Q12

(Source: Author)

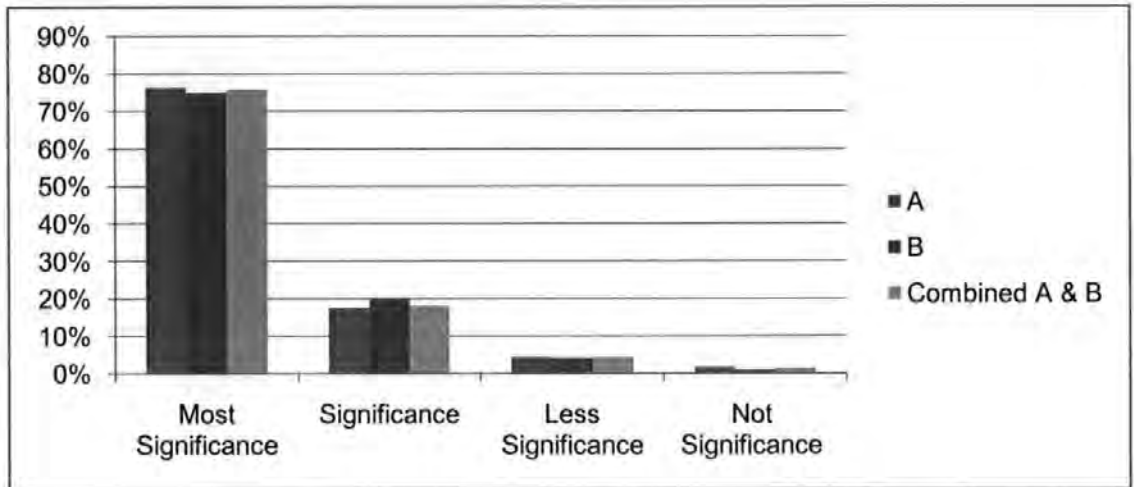


Figure 34 – Company A&B results for survey Part One Q12

(Source Author)

Q 13 - The managers of your Company listen to the voice of staff when they raise matters related to quality improvement and show visible commitment and take ownership of improvement processes.

Company	A	B	A and B
Agree	99	43	142
Neutral	54	23	77
Disagree	70	30	100
Total	223	96	319

Table 27 – Company A&B responses to survey Part One Q13

(Source: Author)

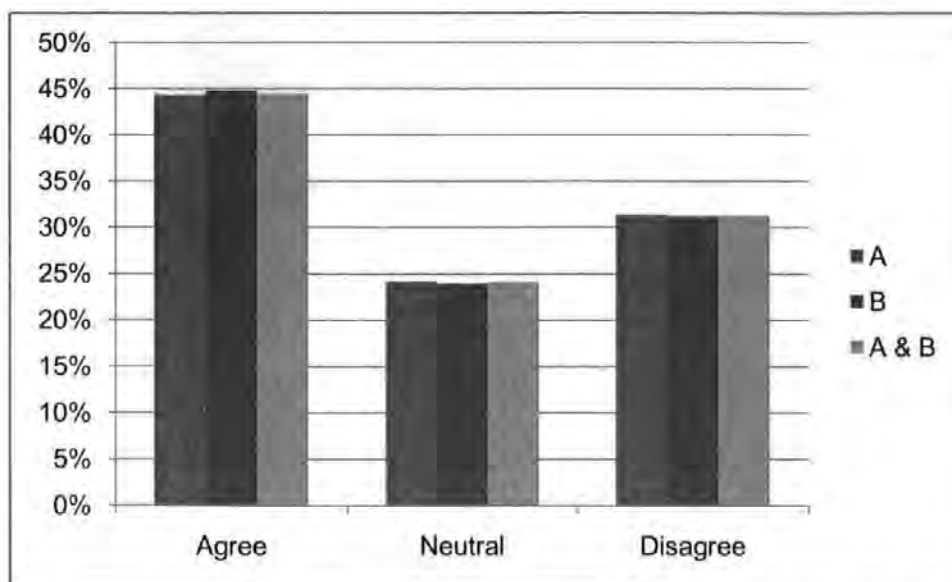


Figure 35 – Company A&B results for survey Part One Q13

(Source: Author)

Commentary of management commitment (MC)

The results of rating the significance of these concepts are provided in company A and B (figure 34) show that the majority of respondents rate the concepts as most significant (76%) and significant (18%). A small percentage of respondents rated the concepts as less significant (4%) and not significant (2%). As seen in combined analysis A and B.

The results also show that the top managers agree to a higher extent than the other groups and that no occupational levels rated it as less significant or not significant. A very small percentage from each group rated it as less significant. That means the senior managers of Libyan Construction Company must show visible commitment and involvement in matters concerning quality in order to improve the quality of services.

The practice of the MC concepts according to occupational levels from company A and B (figure 35) show that a low percentage of respondents agreed with question (45%), the neutral were (24%) and disagreed with the statement (31%). By tested for top managers whether they were listening to employees, it is not surprising that the results provided in company A and B

show that the largest percentage of respondents agreed with the question, the overall results and the percentages of the other groups suggest that the senior managers at Libyan Construction Company are not being committed to quality by the mean of listening to the voice of their employees, that mean there is lack of communication for both company A and B.

Summary of Part one: Knowledge and understanding the concept TQM

The overall of this study is that despite managers' awareness of TQM concepts and ideas, their levels of understanding and knowledge towards these concepts is superficial. Finally; for all The data analysis and the means of rating the significance and practice, concepts and principles presented above reveal that elements, concepts and principles were rated as significant to a great extent, which indicates that the respondents were of the opinion to a very high extent that the elements, concepts and principles were significant be implemented in Libyan construction company A and B. Overall, the results analyses and presented reveal that there is a critical need to understanding the knowledge of TQM in Libyan construction company A and B. The results also reveal that the environment of Libyan company is compatible and its personnel are able to practice the elements and concepts, although there is a lack of understanding amongst its personnel about how to sustain its principles.

5.2.2 Part Two: Questionnaire to identify barriers to TQM

The researcher will find answers for the following question:

To what extent are the elements of TQM applied in Libyan construction companies, and what barriers exist to prevent its full application? This research aim is to identify and critically evaluate the barriers affecting TQM within construction management practices in Libya to achieve the objectives in this research. Following by the barriers identify in conceptual framework of the four types of barriers.

Internal and External Barriers

Non technical barriers

Technical barriers

Organisational culture barriers

Introduction

The results from top managers, middle managers, first-line managers and employees were asked to rank their opinions on a series of statements in the questionnaire related to barriers of TQM implementation (derived from literature review) as discussed in this chapter. Every levels opinion regarding every barrier's category of the four categories mentioned in the conceptual framework of this study, in a separate table. These categories are; external and internal barriers, organisational culture barriers and technical and no technical barriers. Appendices show the respondents' for all levels.

Structure of questionnaire:

Q 1 – 7 Internal and External Barriers

Q 8 – 17 Non technical barriers

Q 18 – 32 Technical barriers

Q 33 – 45 Organisational culture barriers

For the questionnaire itself, see Appendix II.

Rationale for analysis

Scoring

5 = strongly agree

4 = Agree

3 = don't know

2 = Disagree

1 = strongly disagree

Levels of agreement

SD < 0.7 – Good levels of agreement

SD > 1.5 – Poor levels of agreement

SD between 0.7 to 1.5 – Moderate levels of agreement

Internal and External Barriers

Q1: There is a lack of understanding of the purposes of TQM in the industry

Table 22 shows that all levels show a non committed response with moderate levels of agreement in results ($1 < SD < 1.5$), employees in company B strongly agree and had a good level of agreement ($SD = 0.6$).



Table 28 – Responses to survey Part Two, Q1

(Source: Author)

Q2: There is a lack of understanding the benefits of TQM in the industry

All levels show non committed response with weak levels of agreement amongst senior and middle managers ($SD>1.5$). First line manager and employees in company B indicated strongest agreement and good to moderate levels of agreement in responses ($SD= 0.6$ and 0.9 respectively).

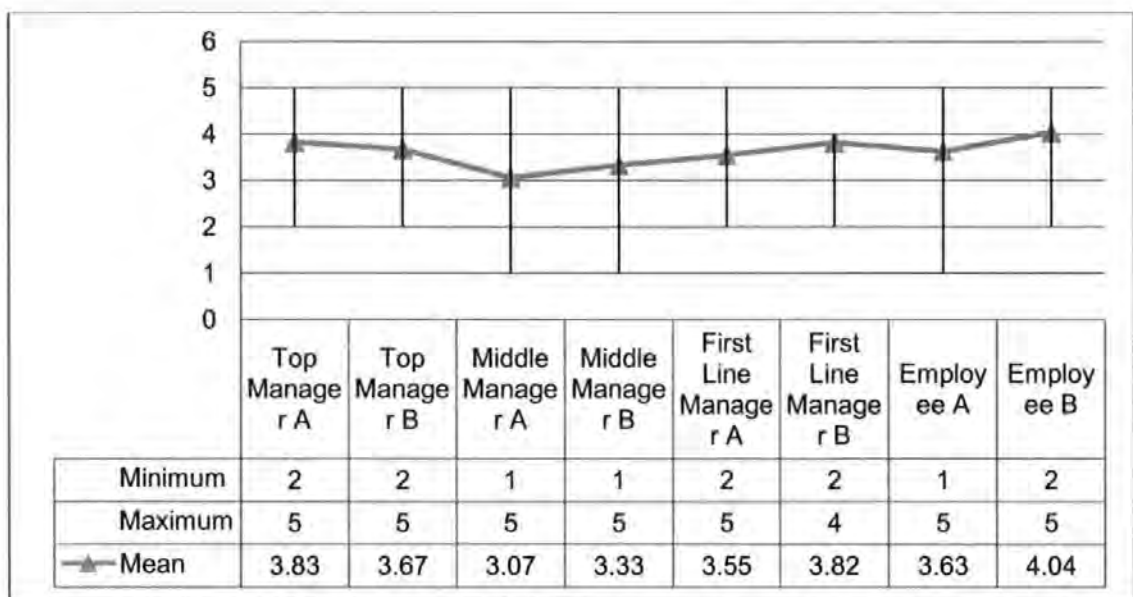


Table 29 – Responses to survey Part Two, Q2

(Source: Author)

Q3: There is no awareness of TQM through employees in the industry

All levels provides an average response to this statement with moderate levels of agreement ($1 < SD < 1.5$).

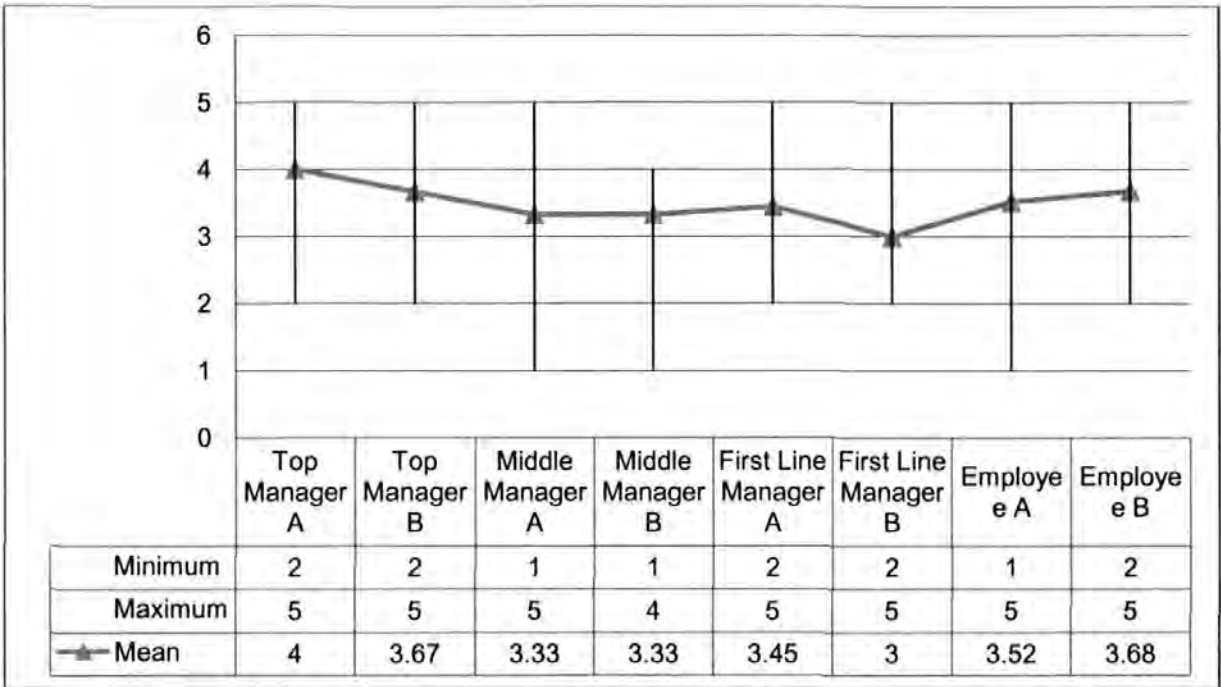


Table 30 – Responses to survey Part Two, Q3

(Source: Author)

Q4: There is a lack of top management commitment to TQM generally within the industry

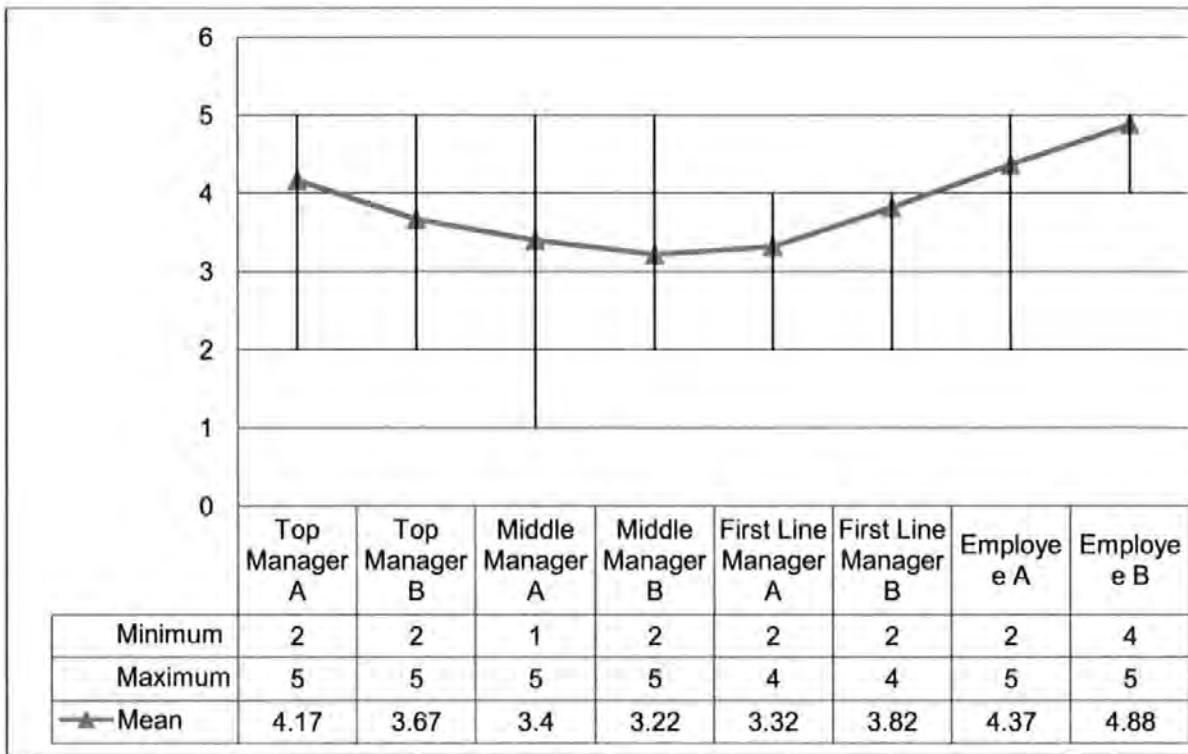


Table 31 – Responses to survey Part Two, Q4

(Source: Author)

Some strong agreement with this statement from employees in both companies with strong levels of agreement (SD = 0.9 and 0.3). Other levels had moderate or low levels of agreement in their answers.

Q5: There is no government financial support to help the organisation to implement a TQM system

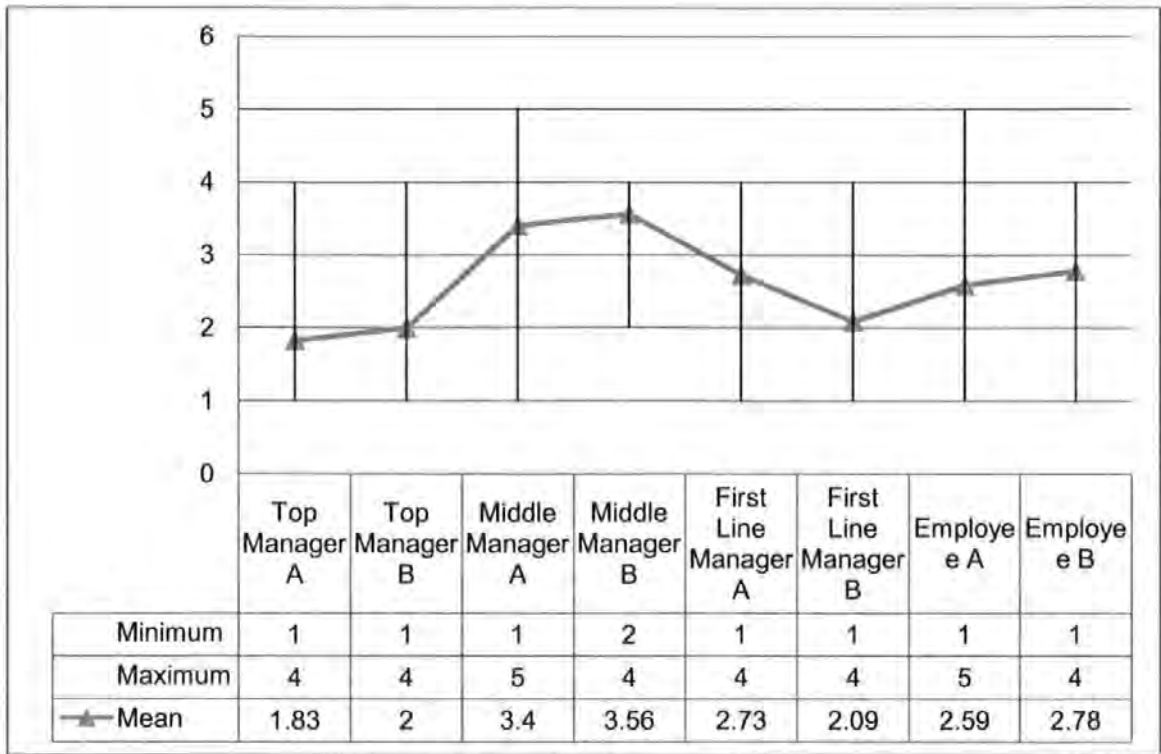


Table 32 survey Part Two, Q5

(Source: Author)

A very strong response from all levels other than middle managers, all disagreeing with the statement, although the level of agreement was quite weak (SD>1.0 generally).

Q6: External socio-political factors affect the organisation's TQM strategy

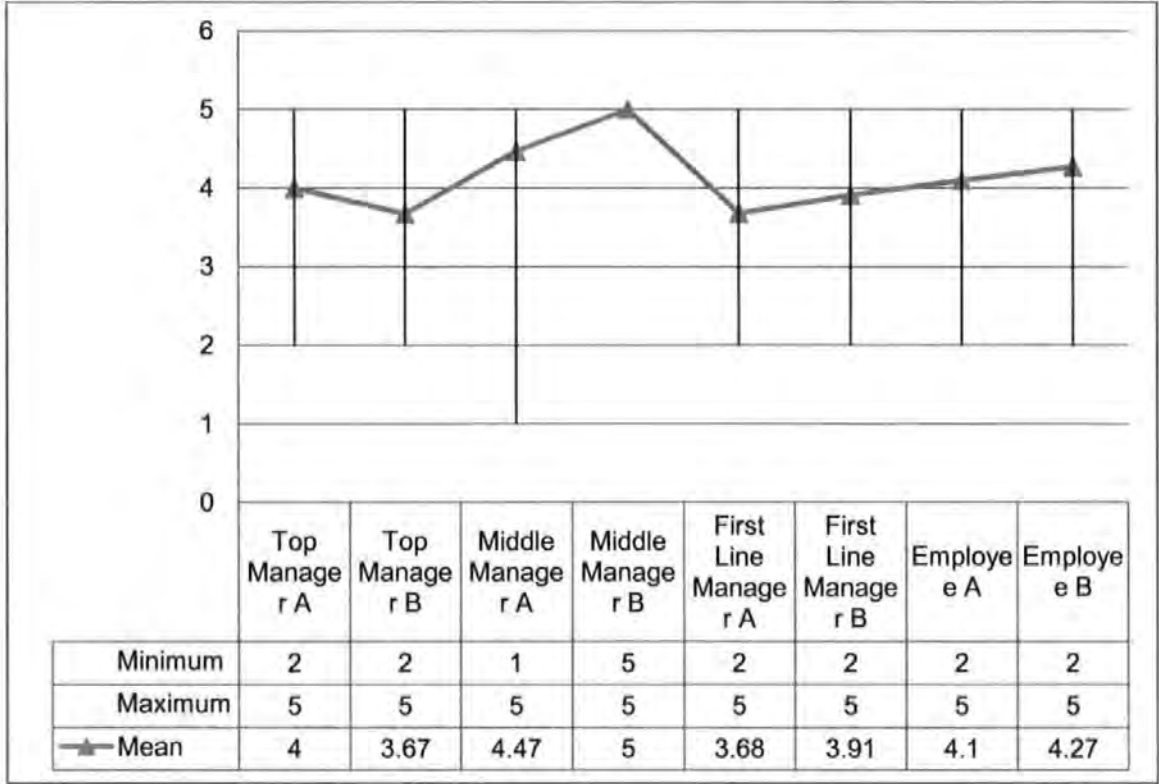


Table 33 survey Part Two, Q6

(Source: Author)

Strong agreement with this statement was received from middle managers and employees in both companies with moderate levels of agreement (SD range from 0 to 1.4).

Q7: There are no outside pressures to make the organisation implement improvements in its quality management systems.

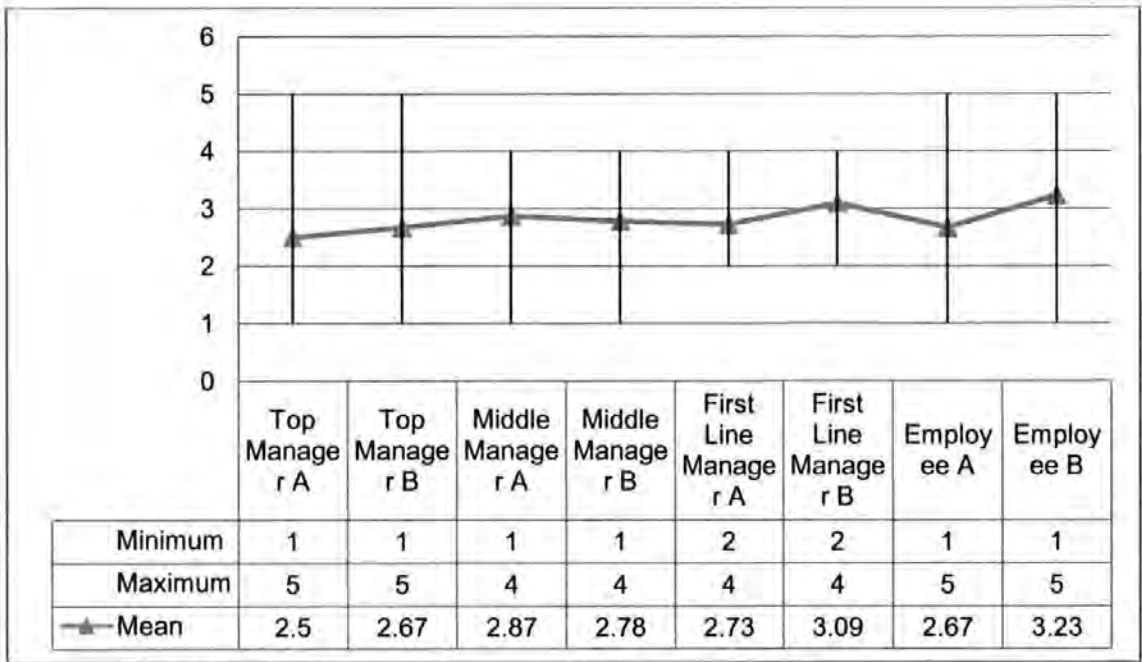


Table 34 survey Part Two, Q7

(Source: Author)

Very consistent and mildly disagreement with this statement at all levels, but agreement was not very strong (SD range from 1 to 2).

Overall assessment of internal and external barriers

There was no real indication on how well understood are the principle and benefits of TQM, or the role of employees in the process

From the employee perspective it is very clear that there is a lack of senior management commitment

There seems to be strong external pressure to implement TQM with support from the Government

Non-Technical Barriers

Q8: Communication between departments is ineffective

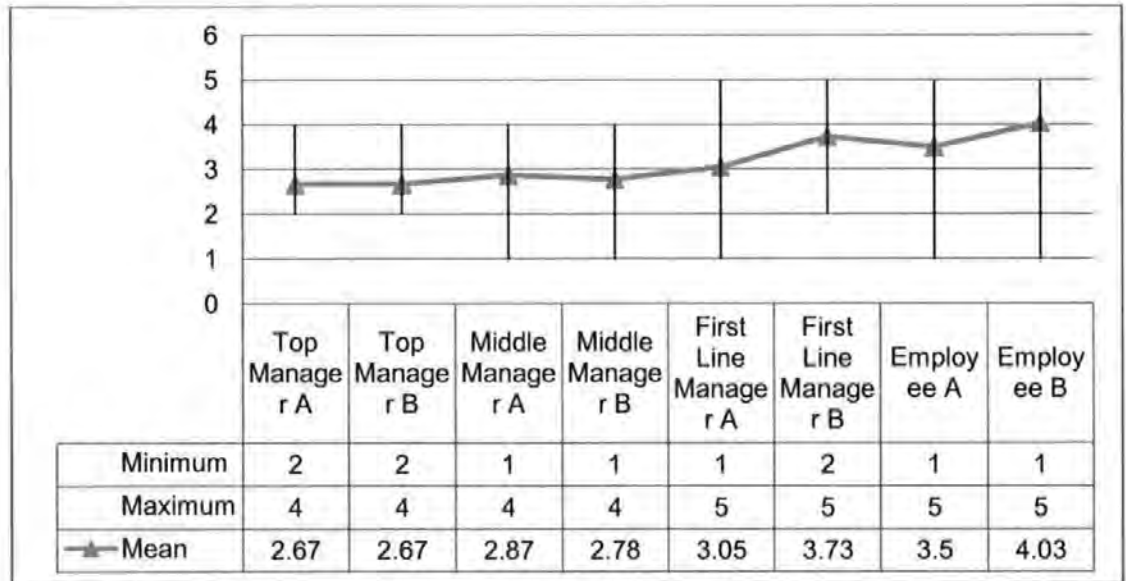


Table 35 survey Part Two, Q8

(Source: Author)

Top and middle managers in both companies A&B disagree with this statement, but there is a split between First line managers for Company A who disagreed and First line managers for Company B that were non-committed. Both sets of employees were non-committal. In all cases the SD was between 0.7 to 1.5 showing a moderate level of agreement in responses.

Q9: There is a general sense of low morale in the organisation

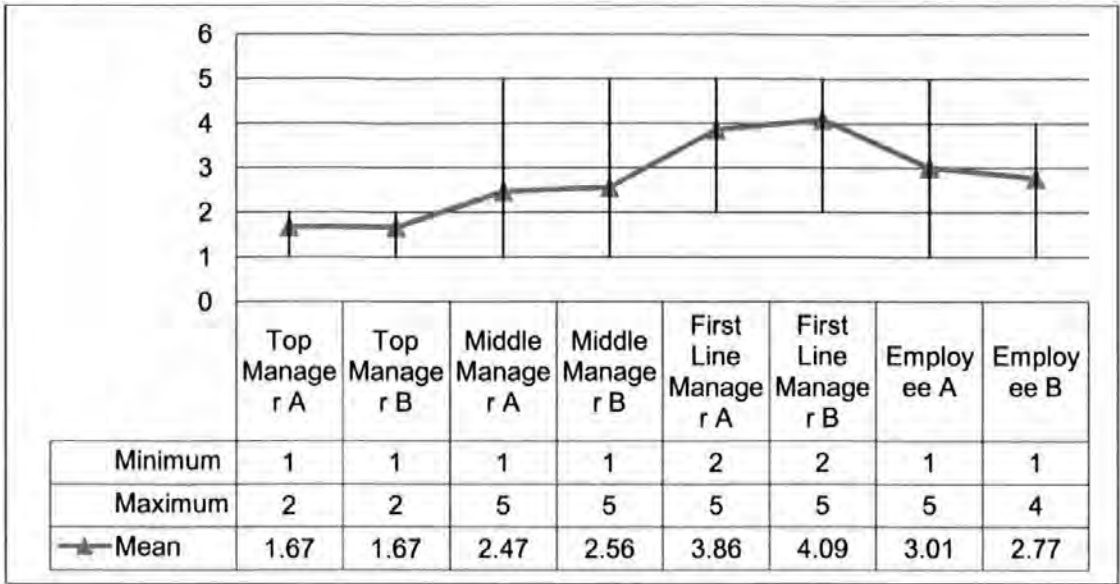


Table 36 survey Part Two, Q9

(Source: Author)

The First line managers were non-committal but all other levels disagreed with this statement. Top manager very strongly disagreed with the statement with strong correlation between their answers ($SD < 0.6$).

Q10: There is no cross-functional cooperation between departments

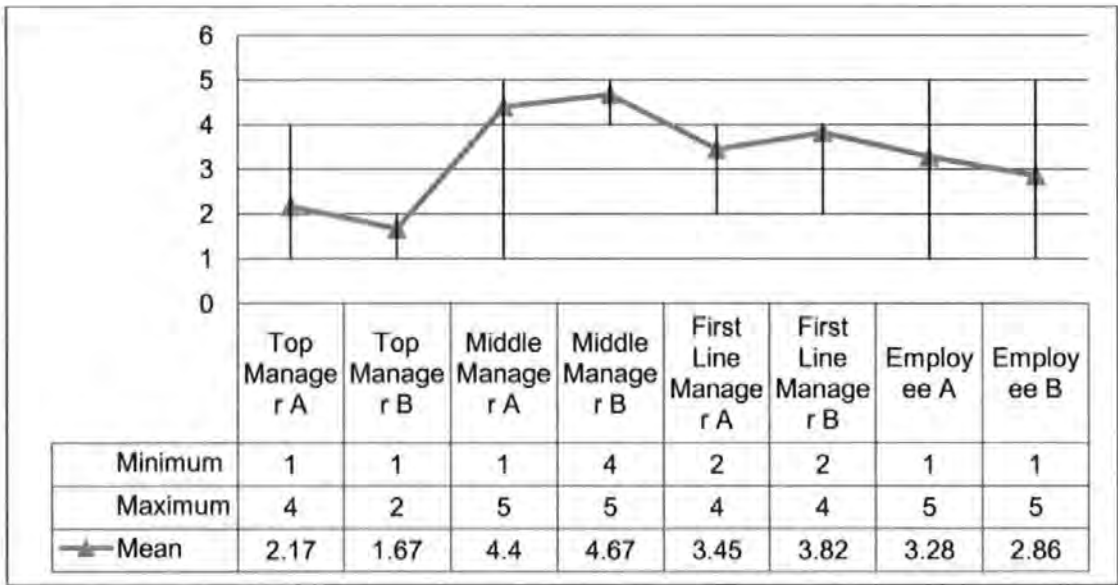


Table 37 survey Part Two, Q10

(Source: Author)

First line managers and employees were generally non-committal, but very different results for top and middle managers. Top managers strongly disagree with the statement but middle managers strongly agree, in both cases the responses from Company B were very consistent ($SD < 0.6$).

Q11: There is no employee involvement in management decisions

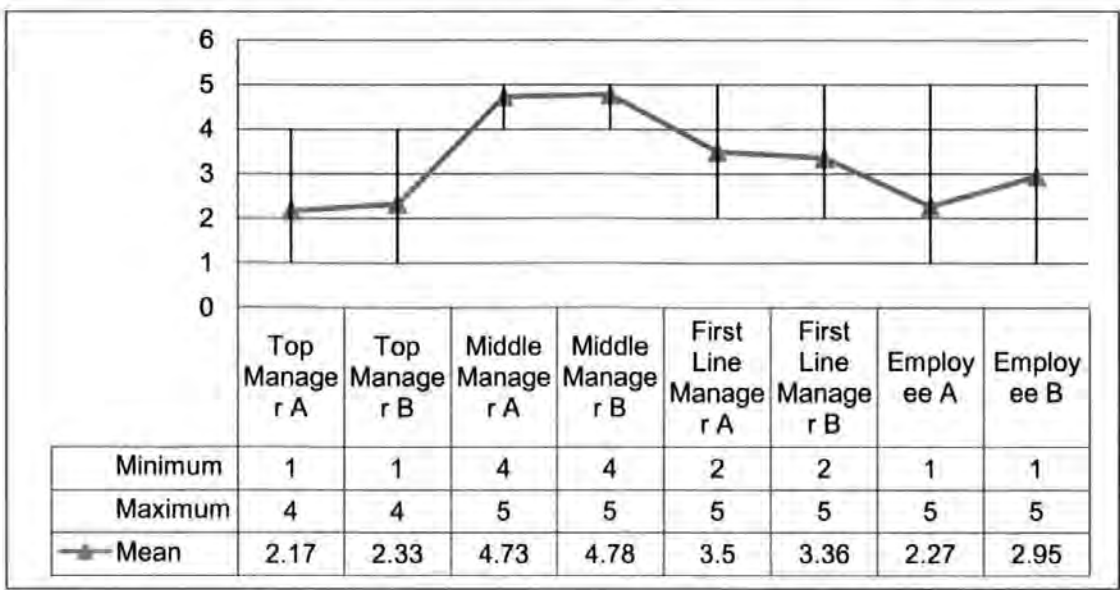


Table 38 survey Part Two, Q11

(Source: Author)

First line managers were non-committal. Top managers and employees disagreed with the statement but middle managers strongly agreed. Middle managers in both company were very consistent ($SD < 0.5$).

Q12: Quality objectives are clearly identified to employees



Table 39 survey Part Two, Q12

(Source: Author)

Middle managers agreed with this statement but all other levels were non-committal.

Q13: There is no customer feedback system

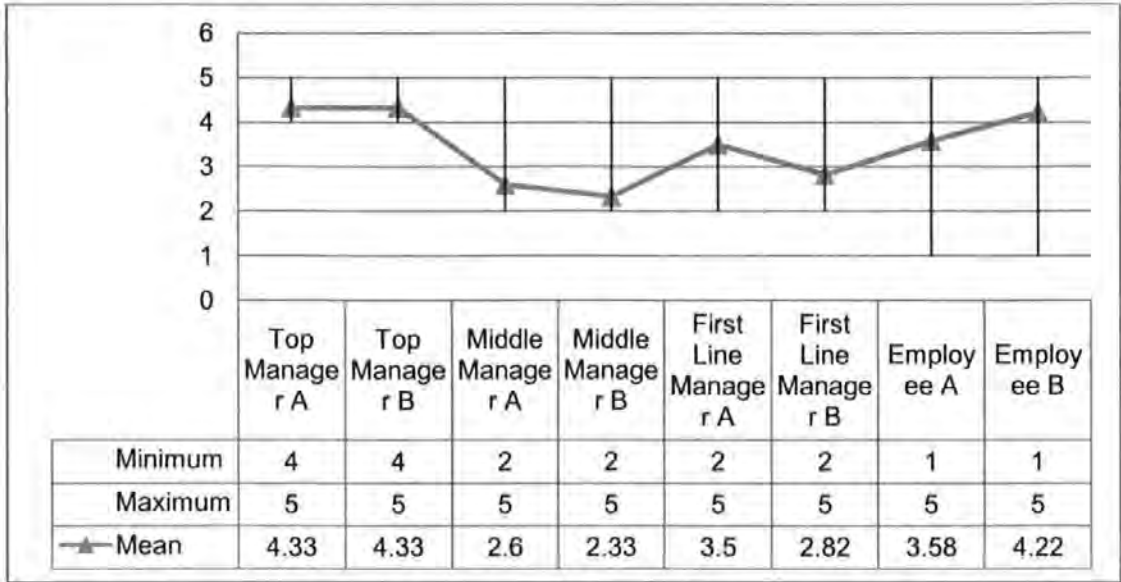


Table 40 survey Part Two, Q13

(Source: Author)

First line managers and employees gave differing responses, but middle and top managers in both companies gave consistent replies. Top managers were very consistent ($SD < 0.6$) in agreeing with the statement but middle managers disagreed with the statement with average consistency.

Q14: There is a lack of cooperation from customers

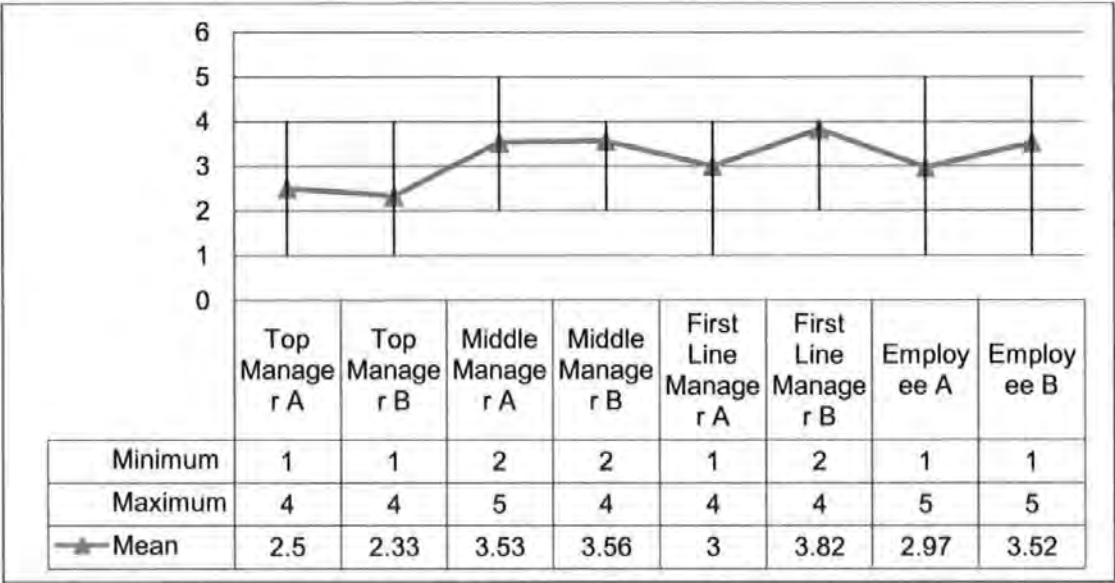


Table 41 survey Part Two, Q14

(Source: Author)

Top managers disagreed with this statement, but all other levels were non-committal, with variations between company (A&B) and only average degree of consistency in answers ($0.7 < SD < 1.5$).

Q15: TQM is an additional workload to the established quality management.

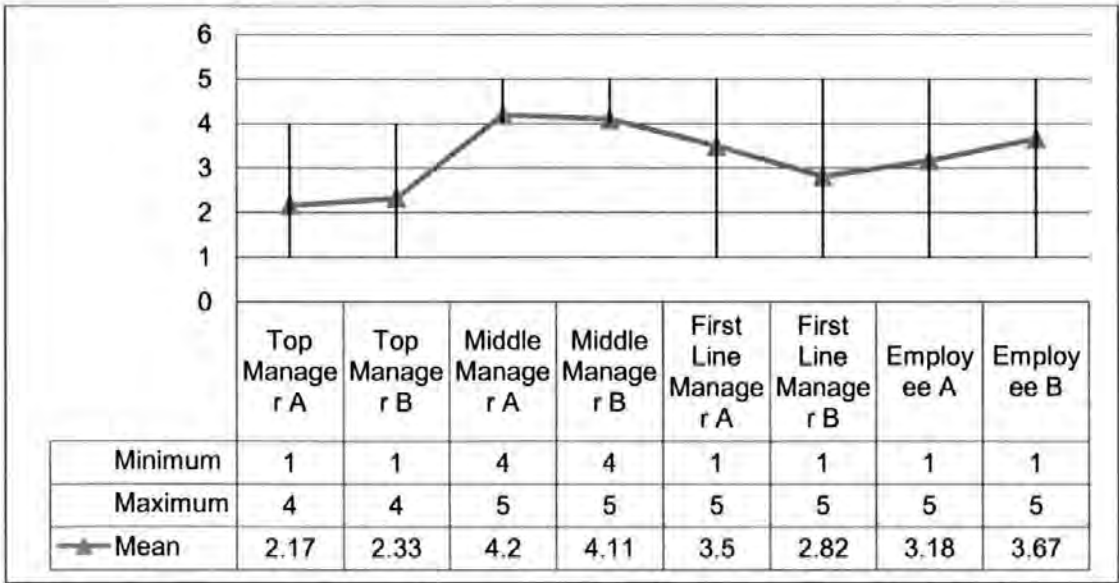


Table 42 survey Part Two, Q15

(Source: Author)

First line managers and employees were generally non-committal, but very different results for top and middle managers. Top managers disagree with the statement but middle managers agree with it, in both companies responses from middle managers were very consistent ($SD < 0.5$).

Q16: Top management provides financial support to the employees to apply and improve quality programs

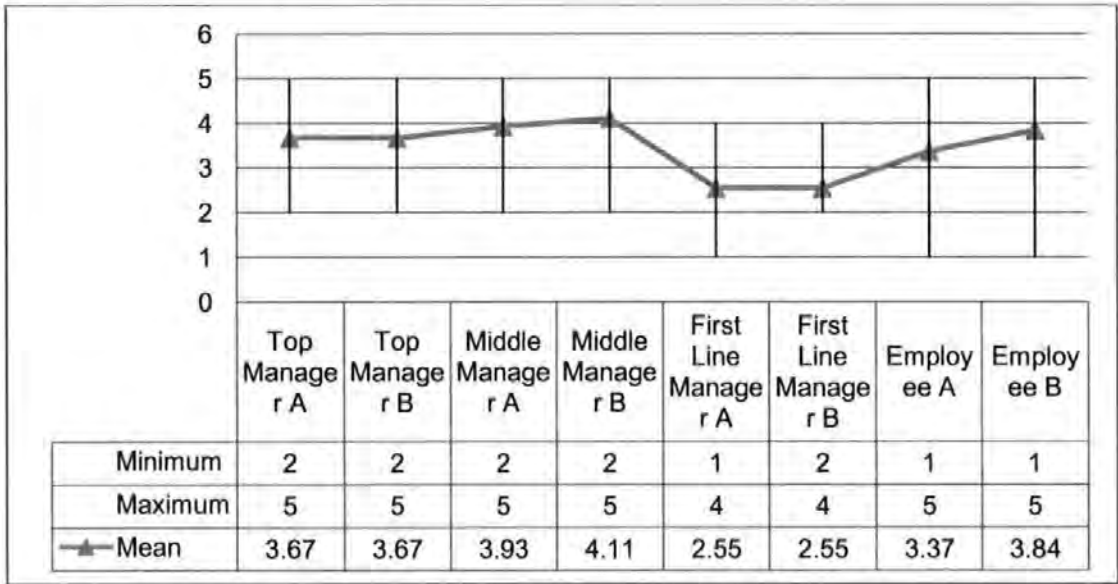


Table 43 survey Part Two, Q16

(Source: Author)

First line manager in both companies disagree with this statement but all other levels were non-committal.

Q17: Customer feedback in the organisation is not generally acted upon

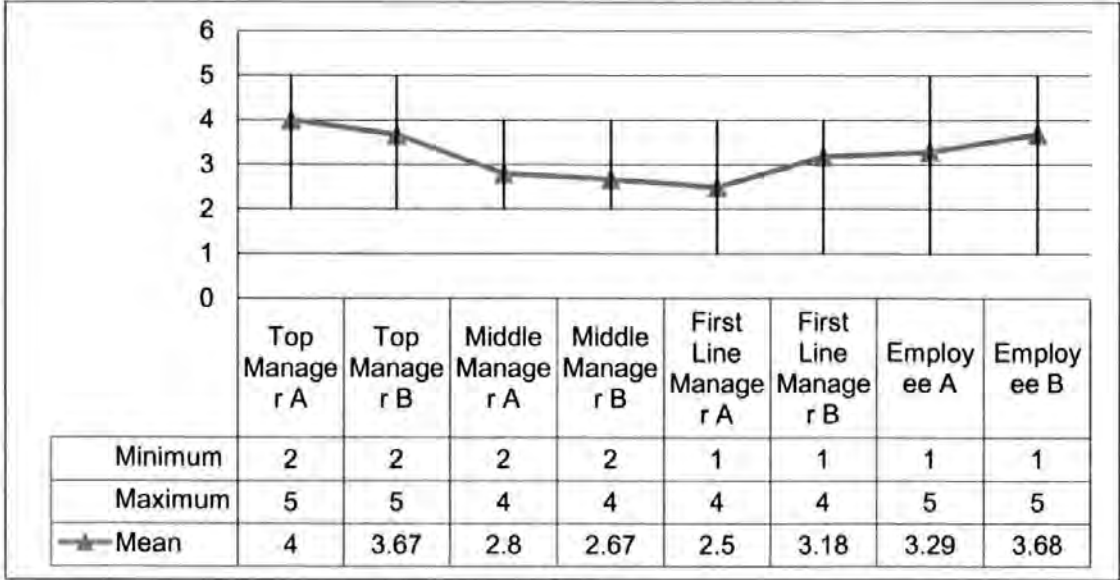


Table 44 survey Part Two, Q17

(Source: Author)

Middle manager in both companies disagreed with this statement as well as first line managers from company A. All other levels were non-committal.

Overall assessment of non-technical barriers

Top and middle managers considered that communication between departments is effective.

Top managers were very opposed to the view that morale in companies was low and this was supported to a less degree by middle managers and employees.

Top managers believed there was cross-function cooperation between departments, but middle managers were of the opposite view.

Top managers believed that employees were involved in the decision making process and this was supported by the employees themselves, but middle managers were of the opposite view.

There was no clear view on whether quality objectives were clearly identified to employees.

Top managers agreed that there is no clear customer feedback system but middle managers were of the opposite opinion.

Top managers did not see TQM as an additional workload to established QM processes but middle managers were of the opposite view.

First line managers were clear in their view that top management does not provide sufficient financial support to apply and improve quality programmes.

Technical Barriers.

Q18: Training targets in the organisation are generally not achieved

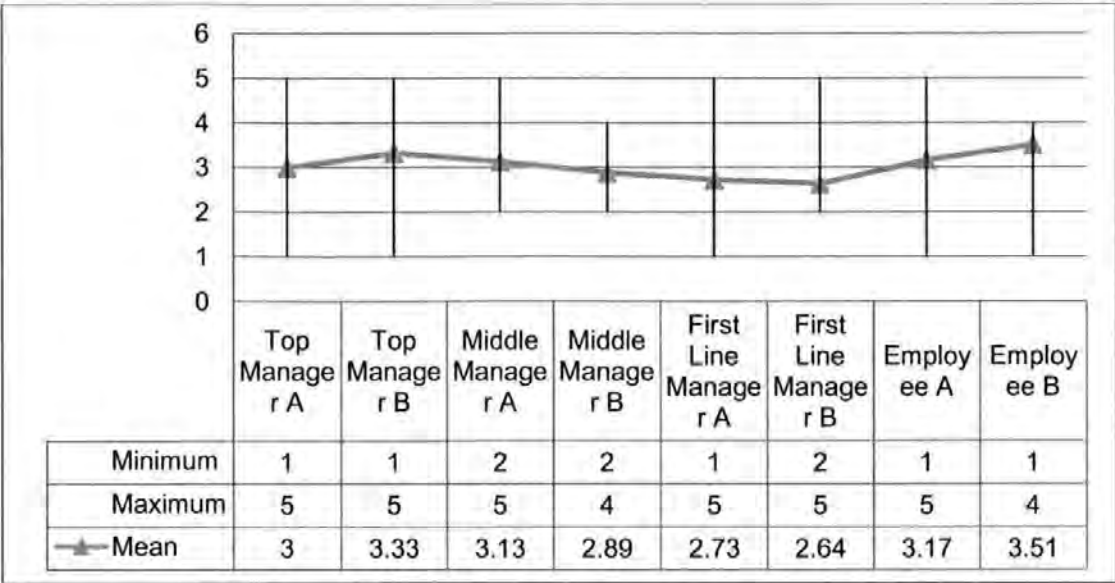


Table 45 survey Part Two, Q18

(Source: Author)

First line managers from both companies disagreed with this statement but other levels were non-committal.

Q19: There is a lack of information on TQM in the organisation

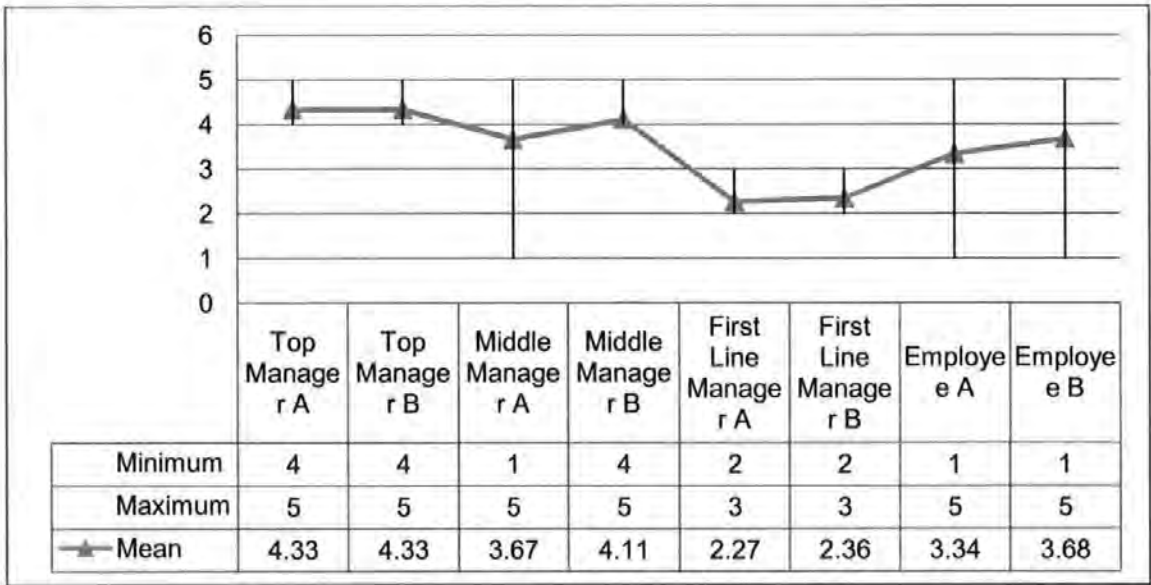


Table 46 survey Part Two, Q19

(Source: Author)

Middle managers and employees were non-committal, but a significant difference in results from top and first line managers. Top managers agreed with the statement but first line managers disagreed with the statement. In both cases consistency in the responses was high ($SD < 0.6$).

Q20: Management problems are analysed to know the reason behind these problems

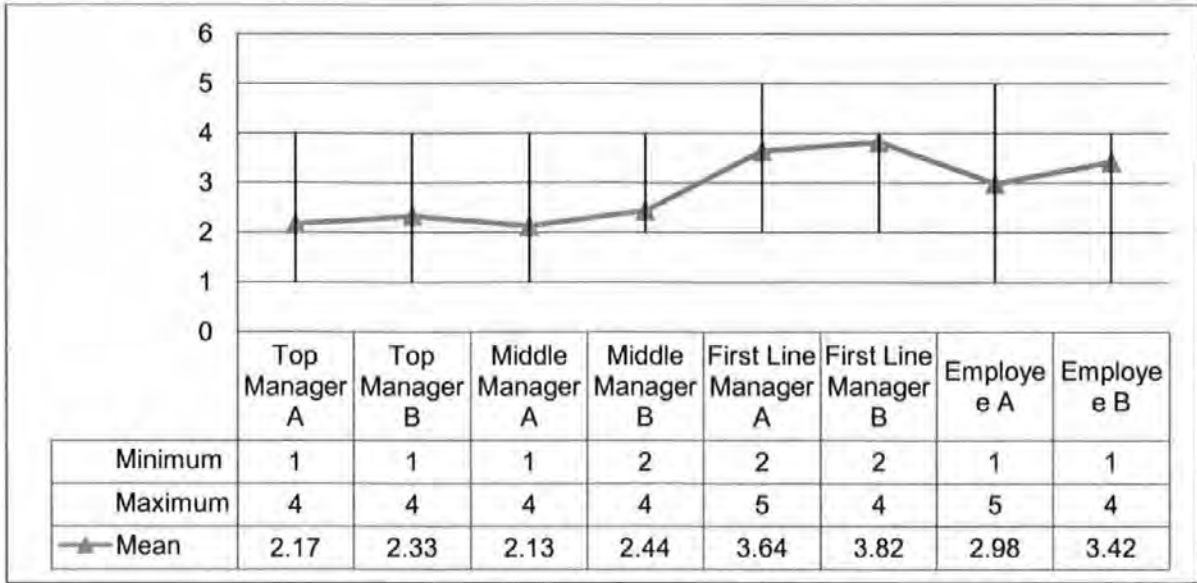


Table 47 survey Part Two, Q20

(Source: Author)

First line managers and employees were non-committal but top and middle managers both disagreed with this statement.

Q21: TQM systems are too difficult to learn and implement

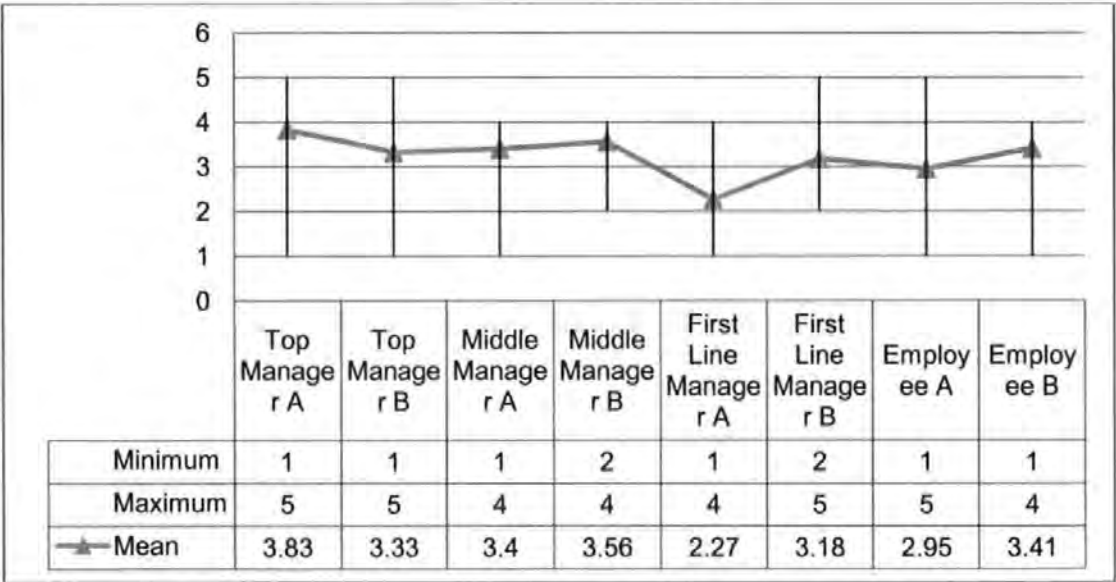


Table 48 survey Part Two, Q21

(Source: Author)

Generally all levels were non-committal but first line managers in company A disagreed with the statement.

Q22: No proper organisational structure has been developed to implement TQM

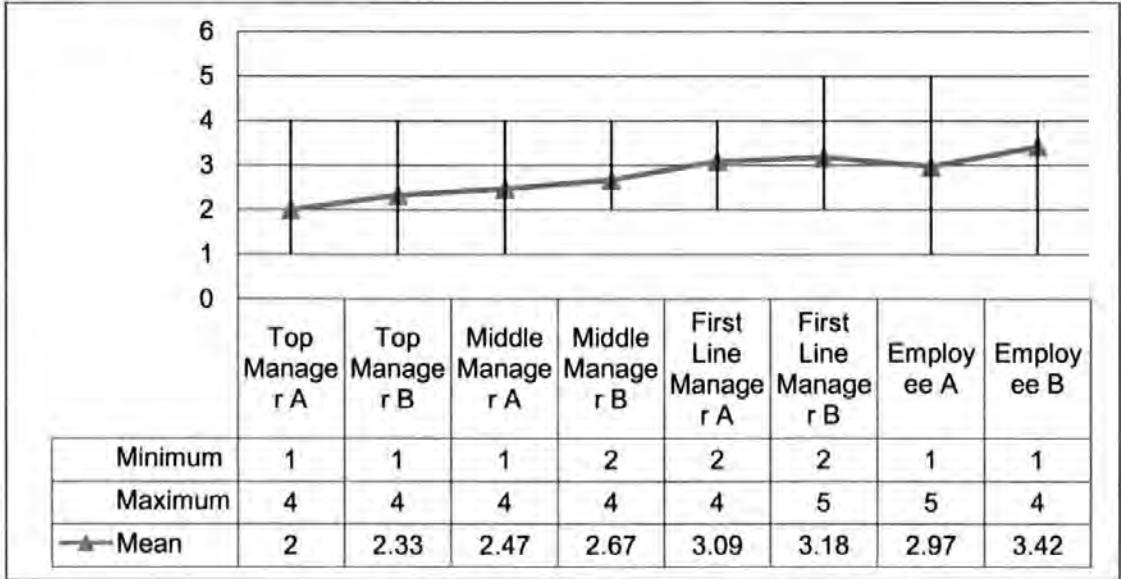


Table 49 survey Part Two, Q22

(Source: Author)

Top and middle managers disagreed with the statement but first line managers and employees were non committal.

Q23: Insufficient technology and poor quality management practices currently exist in the organisation

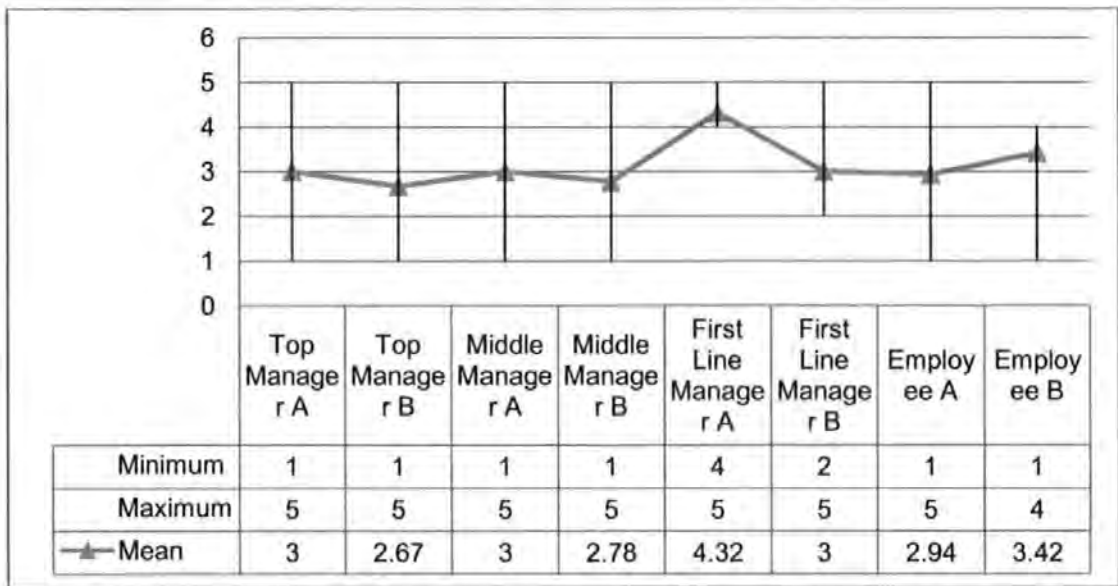


Table 50 survey Part Two, Q24

(Source: Author)

Generally a non-committal response across all levels, but first line managers in company A were very consistent ($SD<0.5$) in agreeing with the statement

Q24: There is a lack of local consultants properly qualified in TQM within the sector

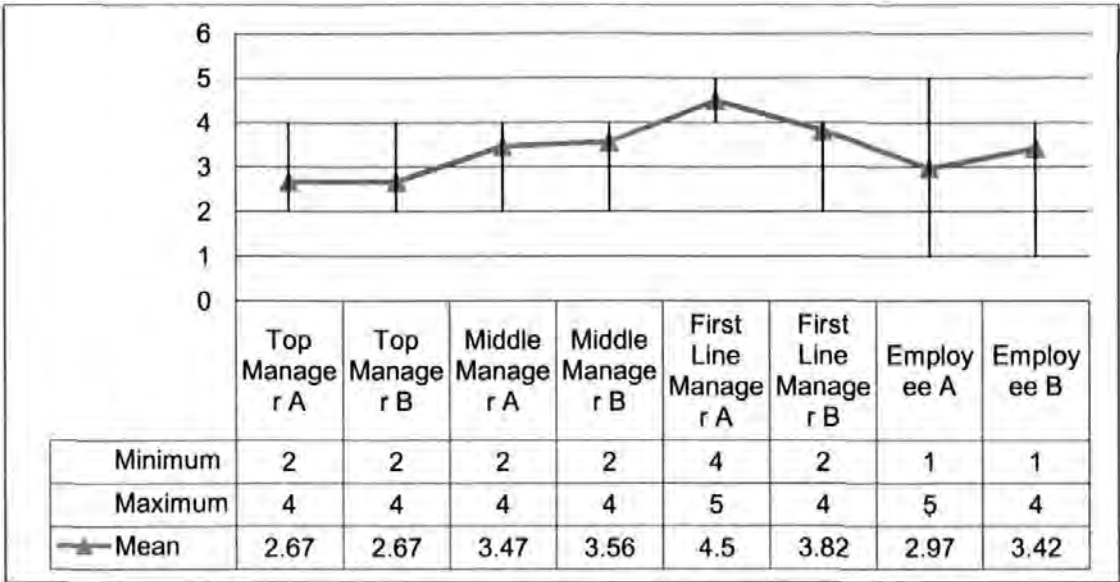


Table 51 survey Part Two, Q24

(Source: Author)

Top managers disagreed with this statement and all others were non committal, but first line manager in company A were very consistent (SD<0.6) in agreeing with the statement.

Q25: There is a lack communication from senior management level to employees

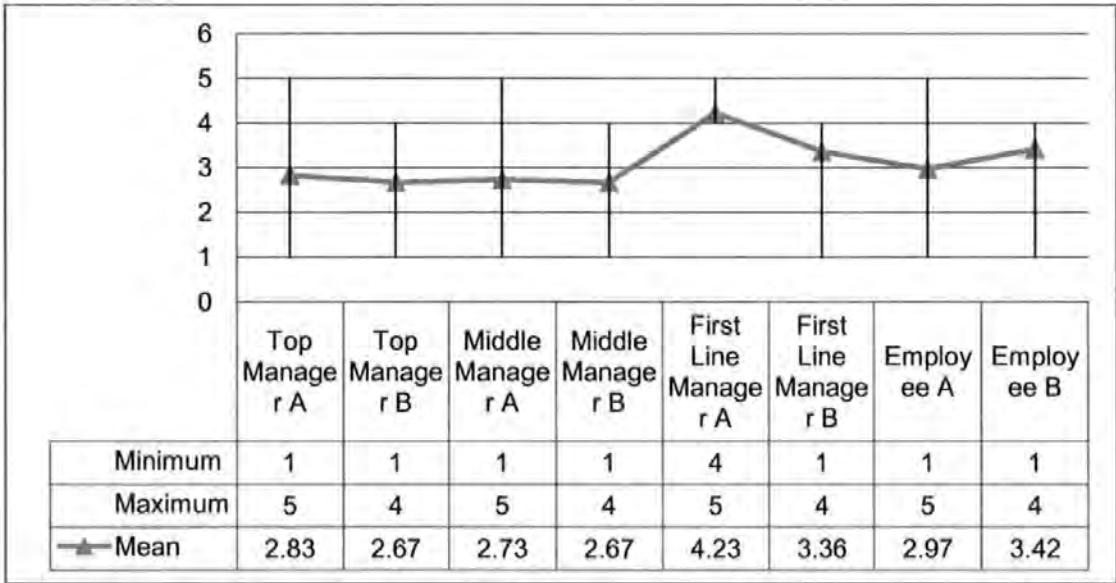


Table 52 survey Part Two, Q25

(Source: Author)

Top and middle manager disagreed with this statement, but first line managers in company A were very consistent ($SD<0.6$) in agreeing with the statement.

Q26: There is no leadership on quality issues in the industry

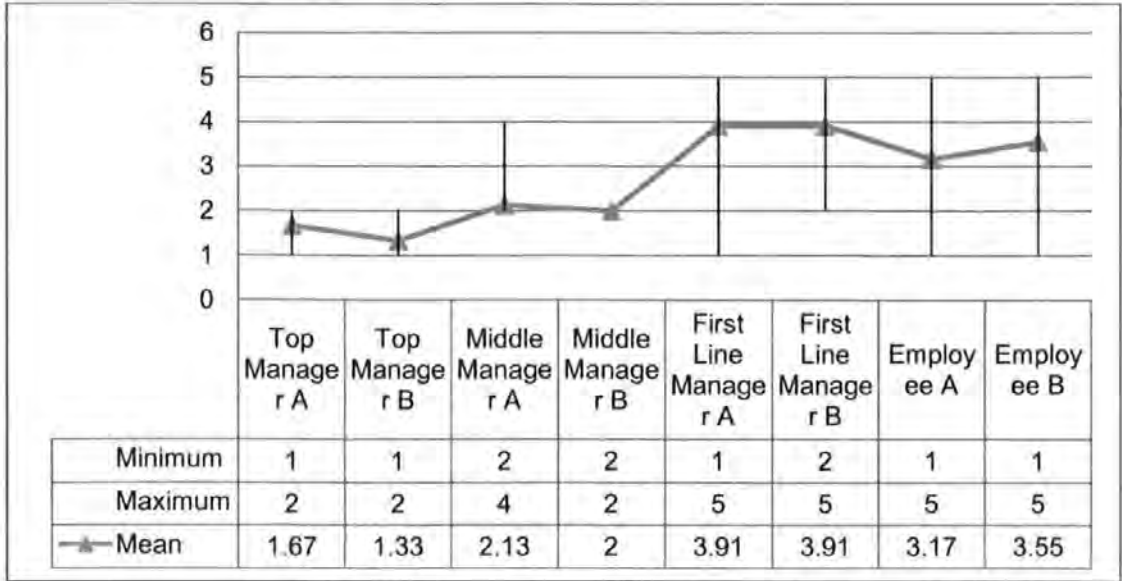


Table 53 survey Part Two, Q26

(Source: Author)

Top and middle manager strongly disagreed with this statement and were very consistent in their responses ($SD < 0.6$). First line managers and employees were non committal.

Q27: Top management is willing to adopt the TQM concept

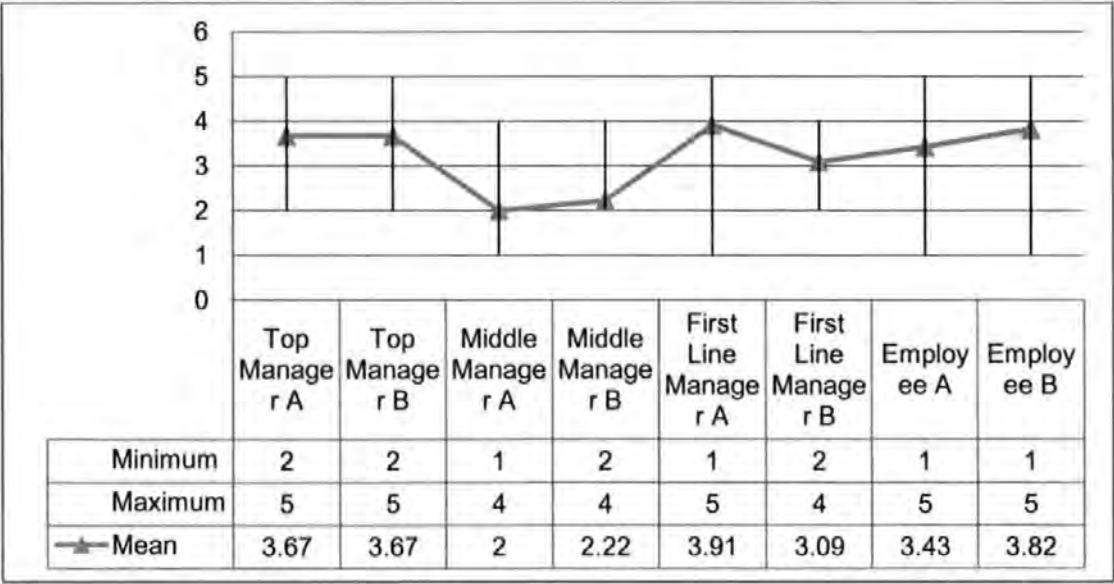


Table 54 survey Part Two, Q27

(Source: Author)

Middle managers disagreed with this statement and were very consistent in their response ($SD < 0.6$). All other levels were non committal.

Q28: There is a lack of expertise in Total quality management in the industry generally

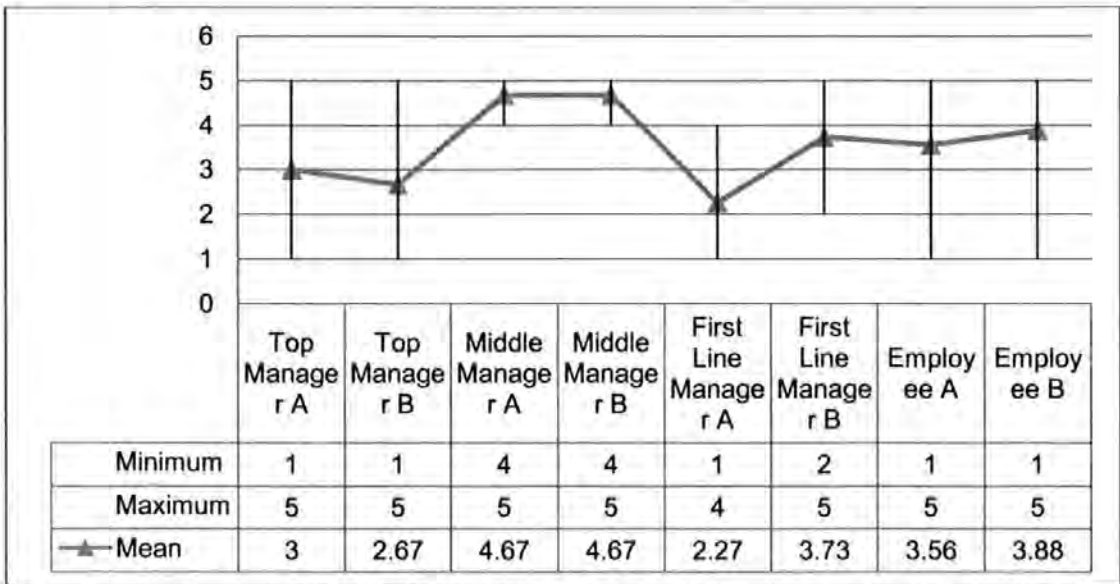


Table 55 survey Part Two, Q28

(Source: Author)

Top managers disagreed with this statement, but middle managers were very consistent (SD<0.5) in agreeing with the statement. First line managers from company A also disagreed with the statement but others were non committal.

Q29: There is a strategic vision for the future about TQM in the organisation

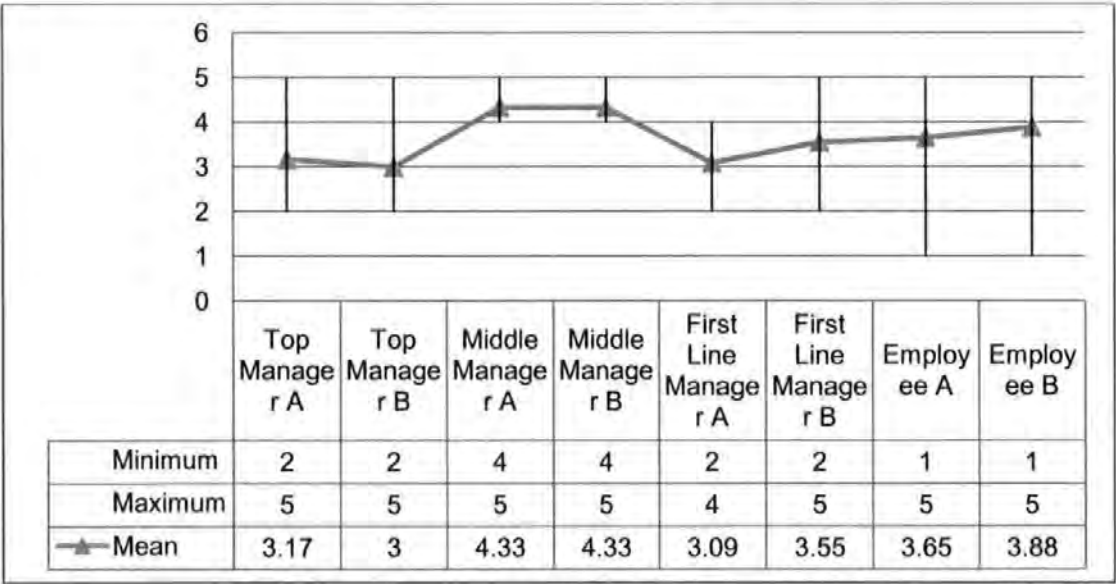


Table 56 survey Part Two, Q29

(Source: Author)

Middle managers were consistent ($SD < 0.5$) in their agreement with this statement but all other levels were non committal.

Q30: The industry does not generally allow time for TQM

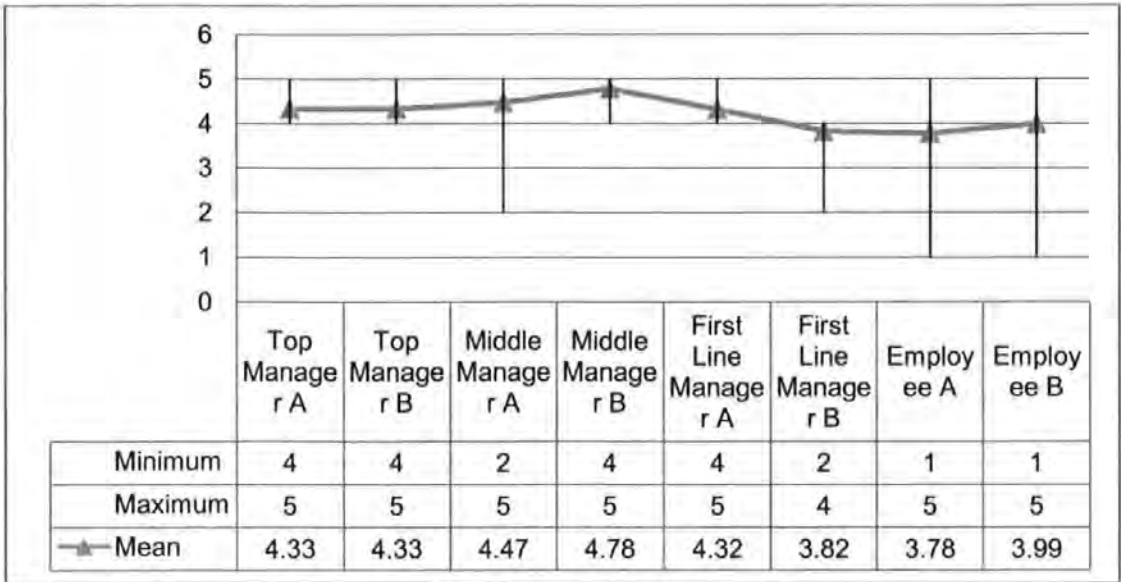


Table 57 survey Part Two, Q30

(Source: Author)

Top and middle managers together with first line managers in company A were all very consistent ($SD < 0.6$) in agreeing with this statement. Others were non committal.

Q31: The organisation trains its employees without a clear purpose

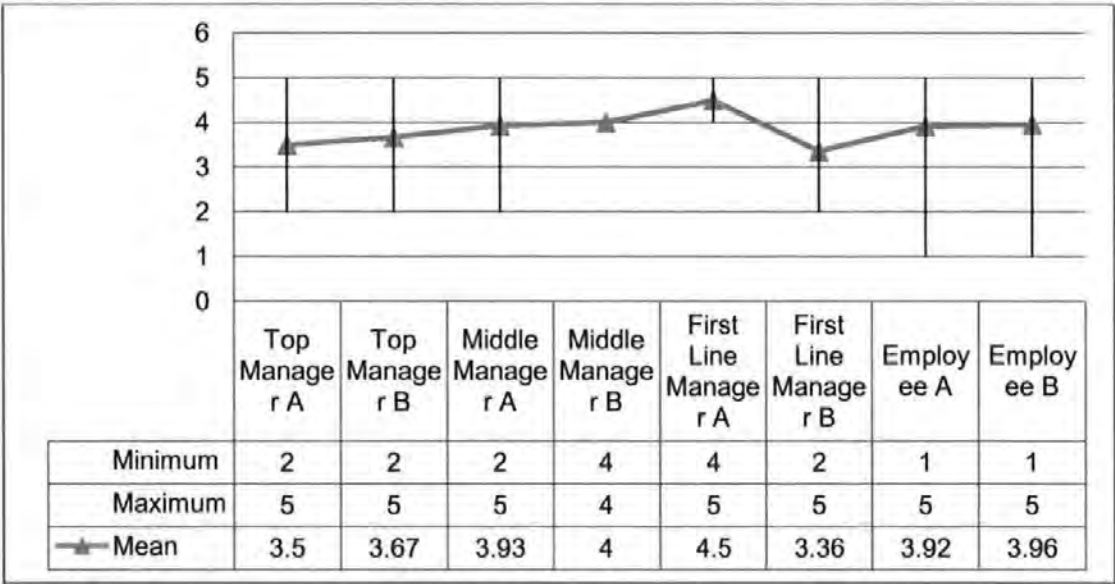


Table 58 survey Part Two, Q31

(Source: Author)

Nearly all levels were non committal on this statement except first line managers in company A who were very consistent in agreeing with the statement ($SD < 0.6$).

Q32: The employees see the total quality management system as a tool to criticise employee performance

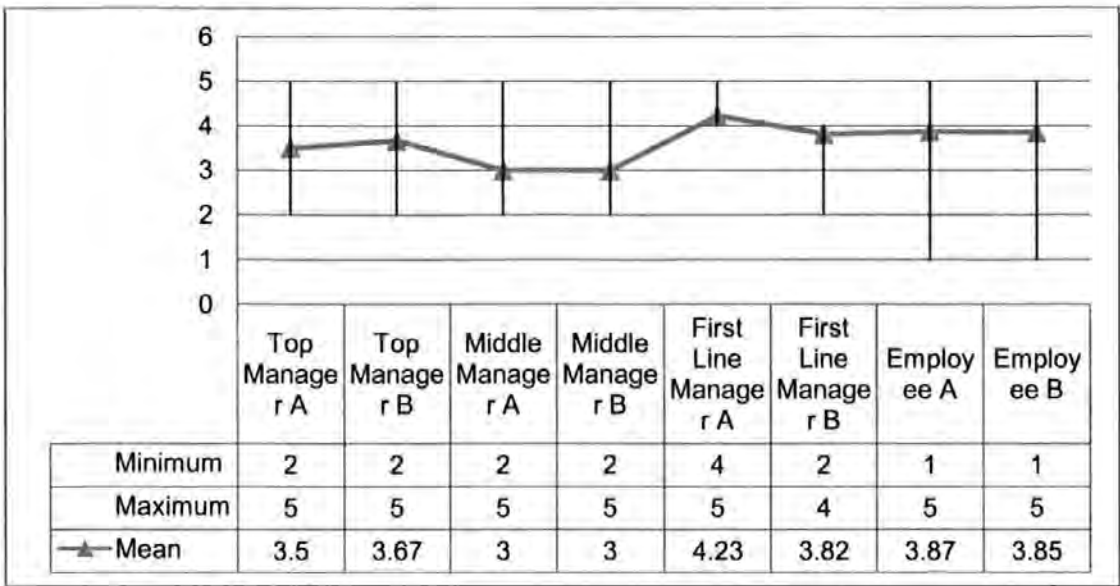


Table 59 survey Part Two, Q32

(Source: Author)

Nearly all levels were non committal on this statement except first line managers in company A who were very consistent in agreeing with the statement (SD<0.5).

Overall assessment of technical barriers

First line managers generally considered that training targets achieved there goal.

Top managers consider there is enough information on TQM within organisations, but first line managers disagree.

Top and middle managers both agree that management problems are not well analysed to discover the reason behind the problems.

First line managers in Company A were the only group to clearly show that TQM systems are not difficult to learn and implement.

Top and middle managers both considered that organisations had the proper structure to implement TQM.

First line managers in company A were very adamant that current technologies and practices in relation to quality were poor.

Top managers considered that there were sufficient well qualified consultants on TQM within the sector, but first line manager from company A were adamant that this was not the case.

Top and middle managers considered that they had provided good communications to employees generally, but first line manager from company A were adamant that this was not the case.

Top and middle managers were very adamant that they provided clear leadership on quality issues.

Middle managers were adamant that top managers were not willing to adopt the TQM concept.

Top managers thought that there was a good level of expertise in TQM generally within the industry, but middle managers were adamant that this was not the case. Interestingly first line managers from company A agreed with top managers.

Only middle managers were clear that a strategic vision for TQM existed within the organisation.

Top, middle and first line manager were all very clear that the industry does not allow time for TQM.

First line managers from company A were clear that their organisation trains people without a clear purpose.

First line managers from company A were clear that in their organisation TQM was used as a tool to criticise employees.

Note: First line managers stand out in these responses as having some distinct views and those in company (A) being very prominent on many occasions.

Organisational culture Barriers

Q33: The promotion of managers in departments within the company is not based on qualifications

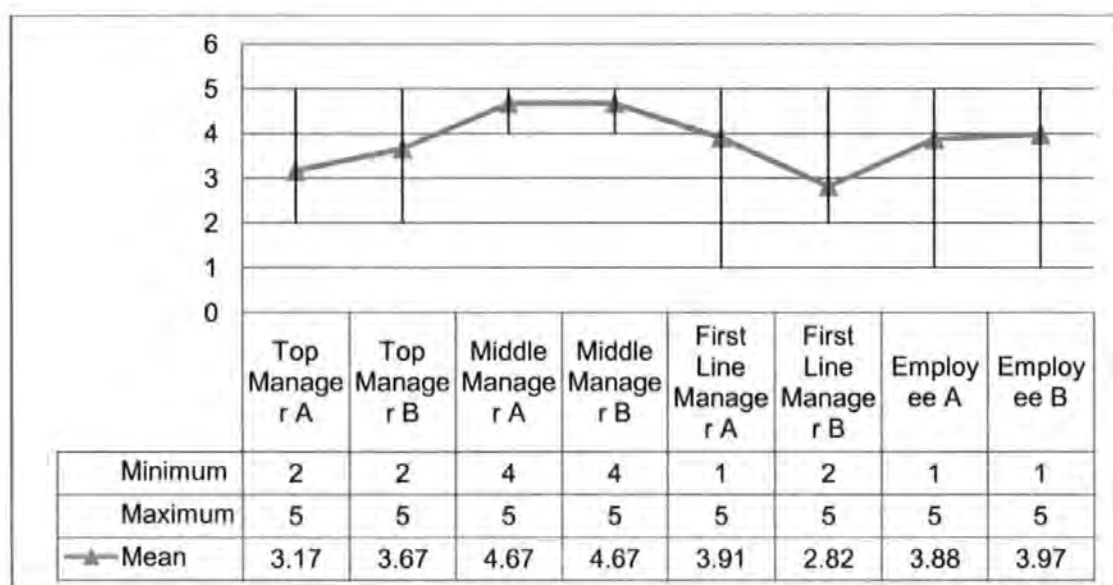


Table 60 survey Part Two, Q33

(Source: Author)

Middle managers were very consistent ($SD < 0.5$) in their agreement with this statement, other levels were non committal, but first line managers from company B disagreed with the statement.

Q34: Employees resist changes to quality management systems in the organisation

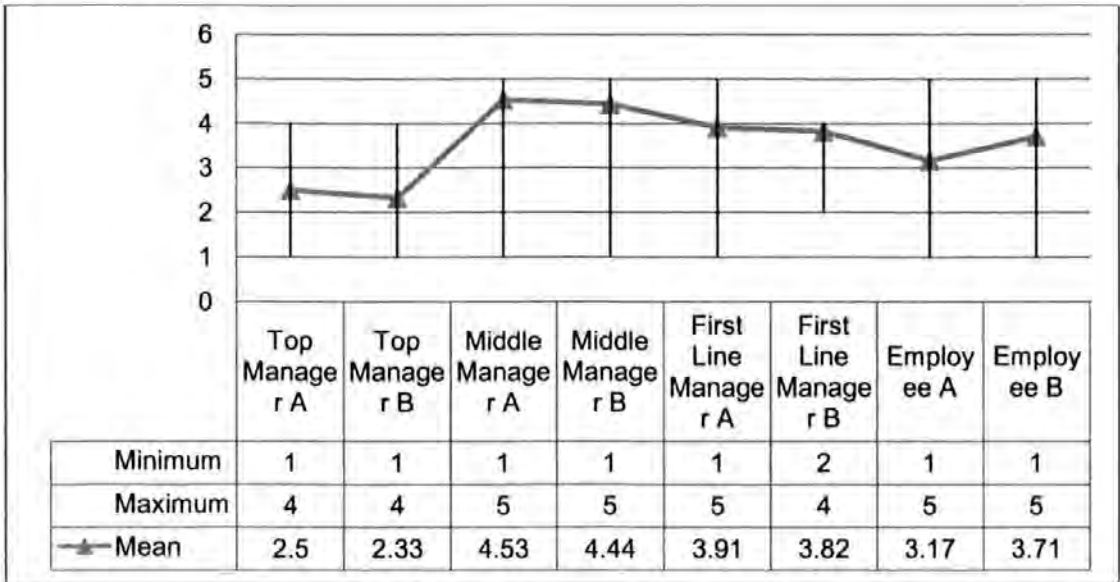


Table 61 survey Part Two, Q34

(Source: Author)

Top managers disagreed with this statement but middle managers agreed with it. Other levels were non committal.

Q35: A bureaucratic culture is prevalent in the organisation

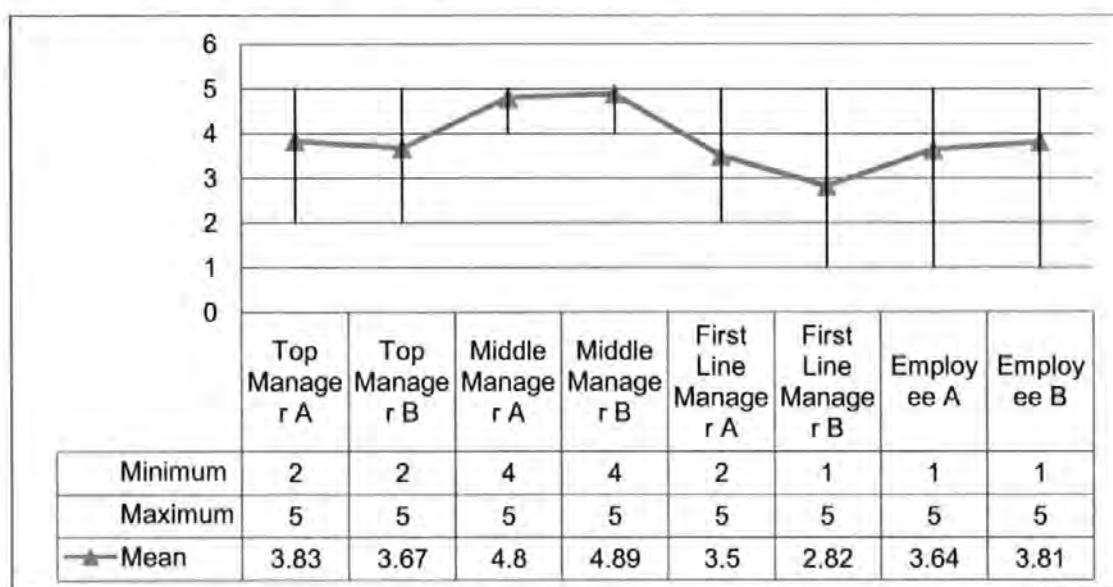


Table 62 survey Part Two, Q35

(Source: Author)

Middle managers were very consistent ($SD < 0.5$) in their response to this statement and agreed with it. Other levels were non committal but first line managers from company B disagreed with the statement.

Q36: Many people are appointed to positions without having the skills to undertake the role effectively

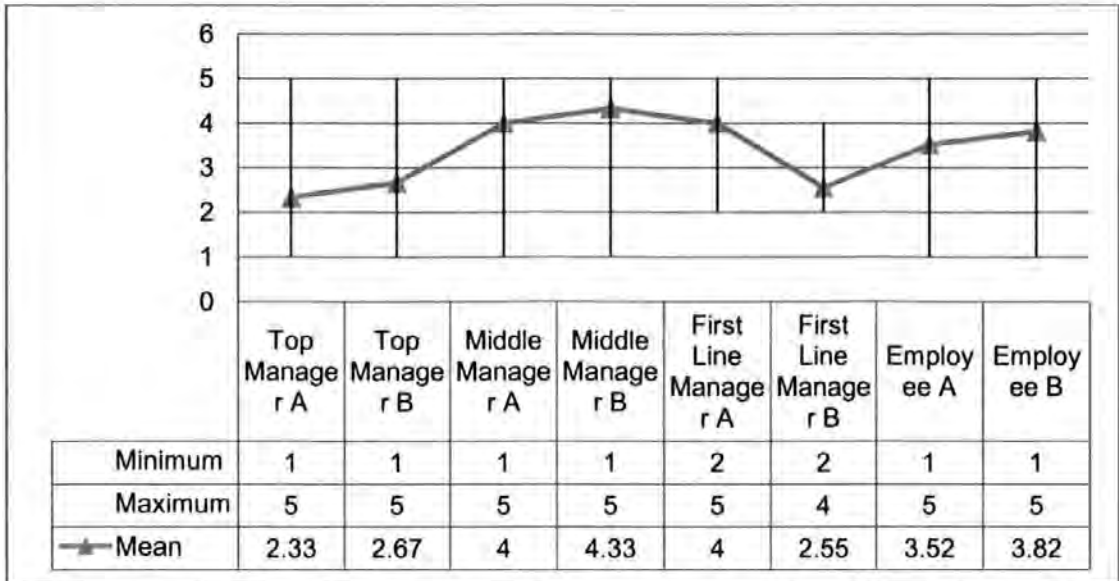


Table 63 survey Part Two, Q36

(Source: Author)

Top managers disagreed with this statement but middle managers agreed with it. First line managers in the two companies gave opposite views, A agreed, B disagreed.

Q37: Employees have difficulty understanding TQM requirements

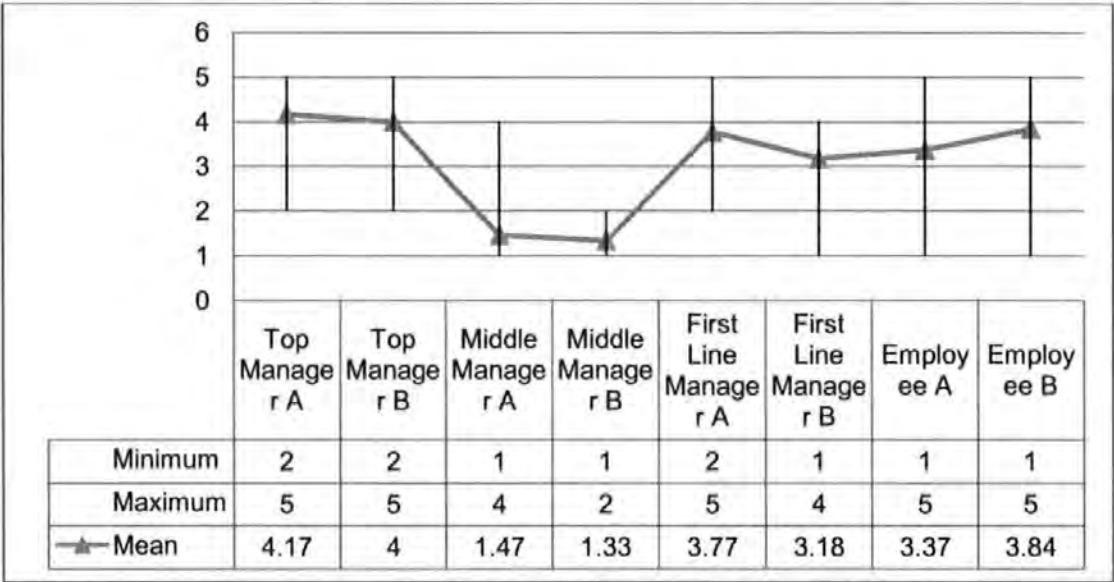


Table 64 survey Part Two, Q37

(Source: Author)

Top manager agreed with this statement but middle managers strongly disagreed with it. Other levels were non committal.

Q38: Different departments have different operating systems

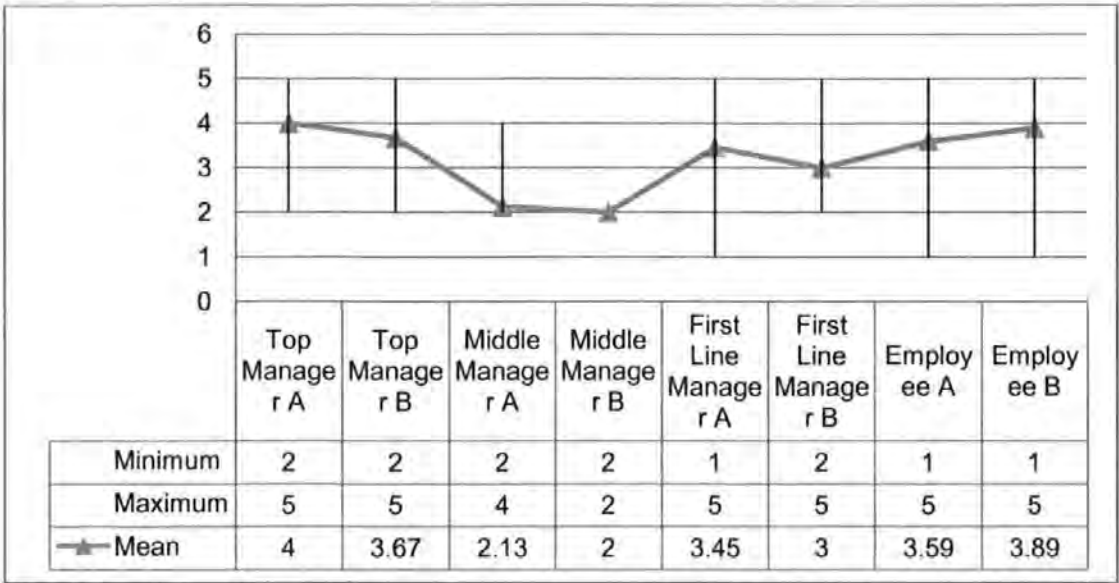


Table 65 survey Part Two, Q38

(Source: Author)

Middle managers were very consistent ($SD < 0.6$) in disagreeing with this statement but other levels were non committal.

Q39: The family history of individuals has a major influence on operational management

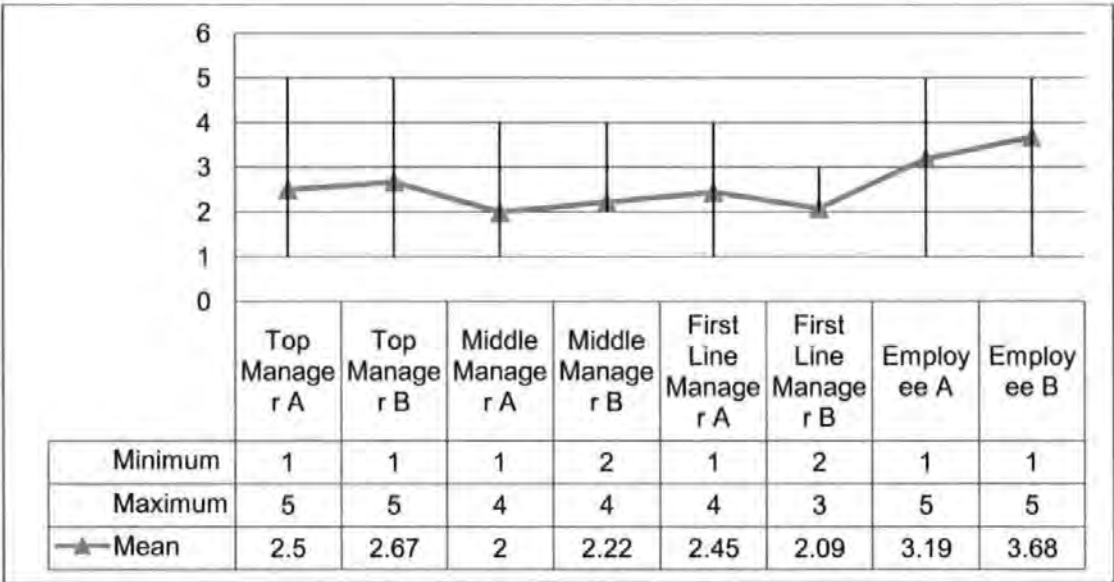


Table 66 survey Part Two, Q39

(Source: Author)

Employees were non committal but all other levels disagreed with this statement with middle managers being highly consistent in their response (SD<0.7).

Q40: There is high employee absenteeism

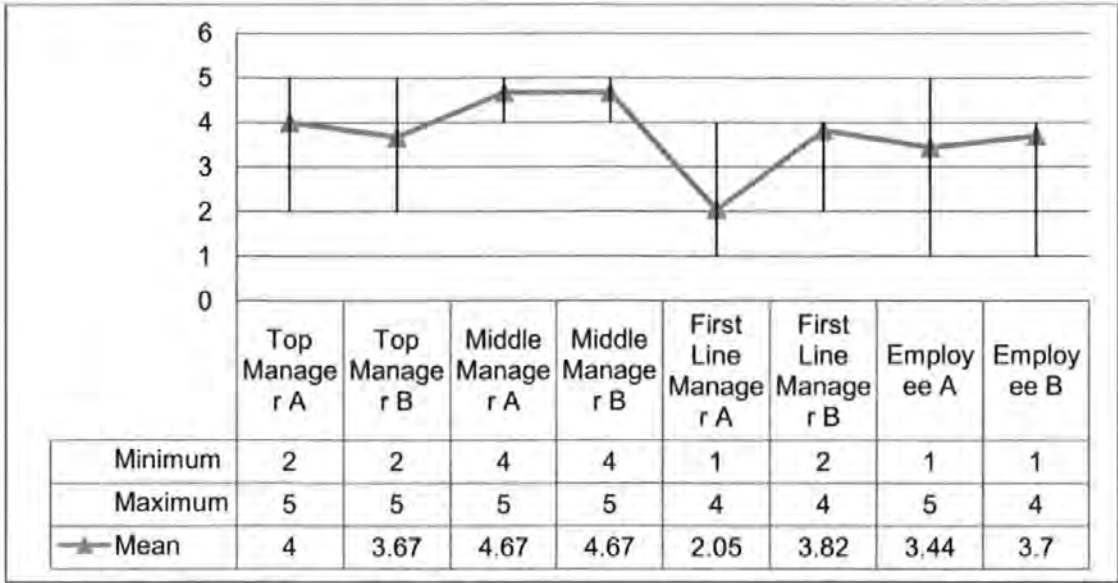


Table 67 survey Part Two, Q40

(Source: Author)

Middle managers agreed with this statement with a high level of consistency ($SD < 0.5$), but first line managers from company A were also consistent ($SD < 0.7$) in disagreeing with the statement.

Q41: Employees are not working to improve the future of the organisation

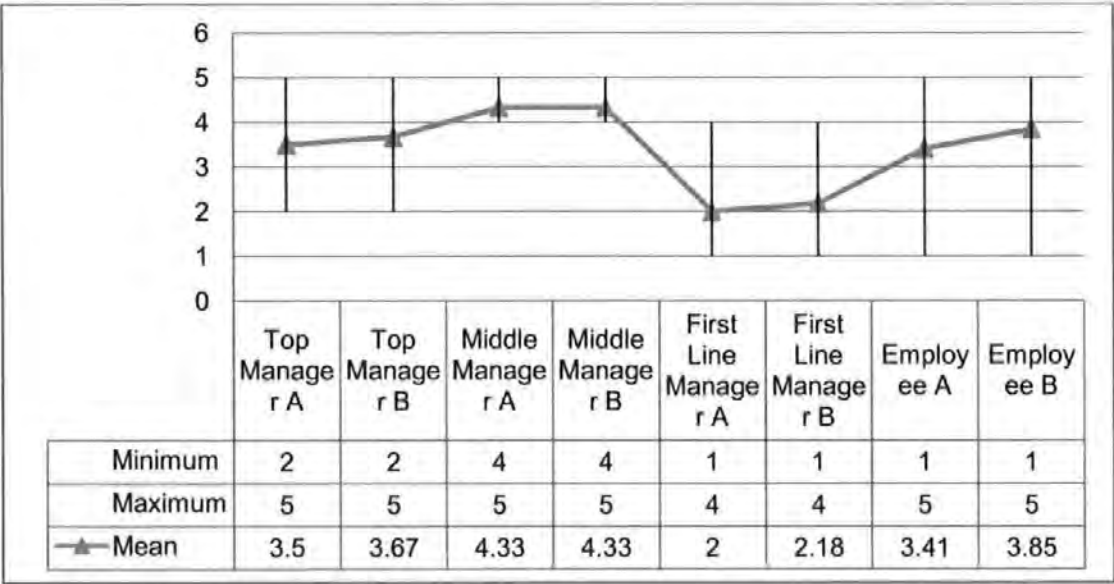


Table 68 survey Part Two, Q41

(Source: Author)

Middle managers agreed with this statement and showed a high level of consistency ($SD < 0.5$) but First line managers disagreed.

Q42: The organisation lacks a motivation and reward system

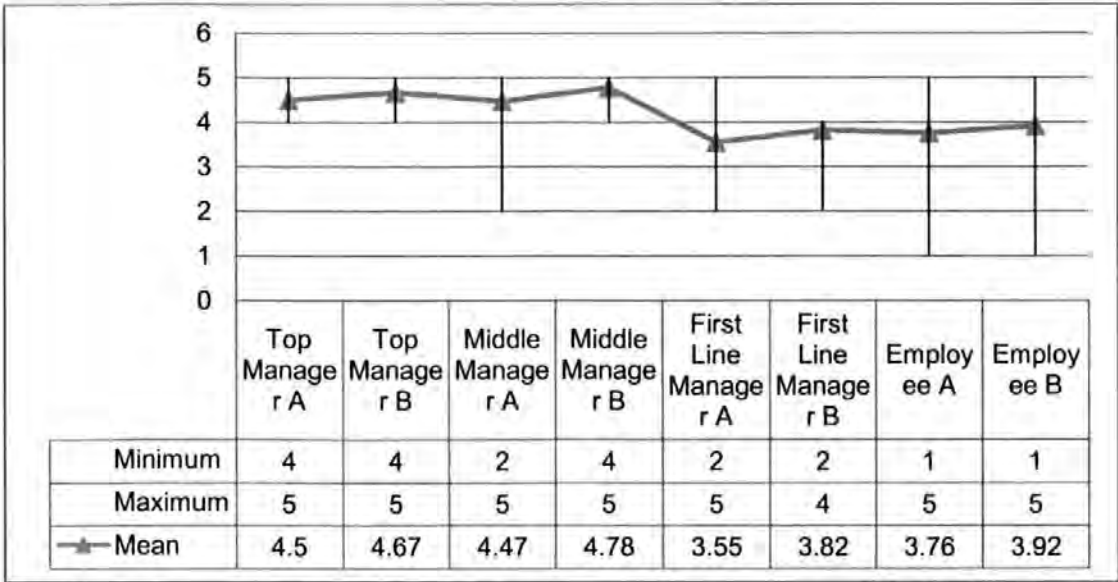


Table 69 survey Part Two, Q42

(Source: Author)

Top and middle managers agreed with this statement with a high level of consistency ($SD < 0.6$). Other levels were non committal.

Q43: Employees want to follow instructions rather than to create proposals in their jobs

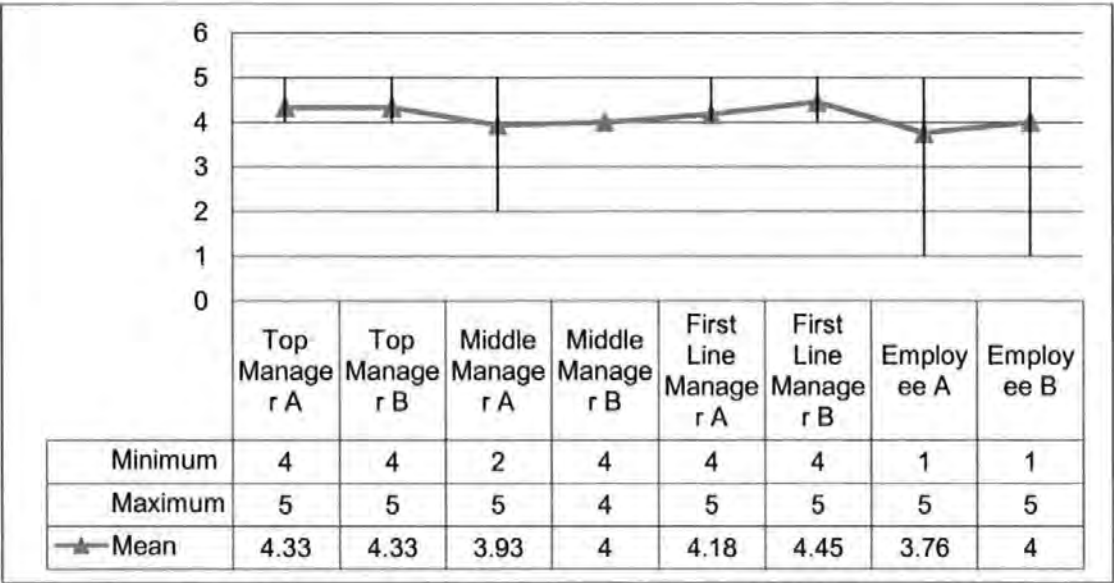


Table 70 survey Part Two, Q43

(Source: Author)

Top, middle and first line manager all agree with a high level of consistency (SD<0.6) on this statement.

Q44: There is no government financial support to help the organisation to implement a TQM system by motivation all the staff to work recognisable.

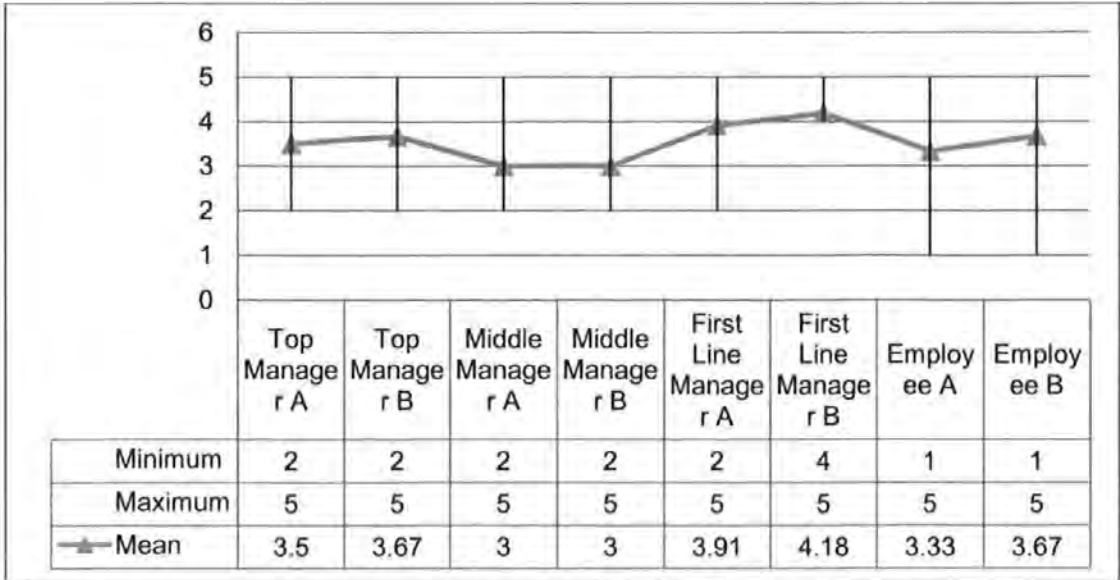


Table 71 survey Part Two, Q45

(Source: Author)

All levels were non committal on this statement

Q45: There is a shortage of studies from governmental department to help guide the organisation in developing a TQM system

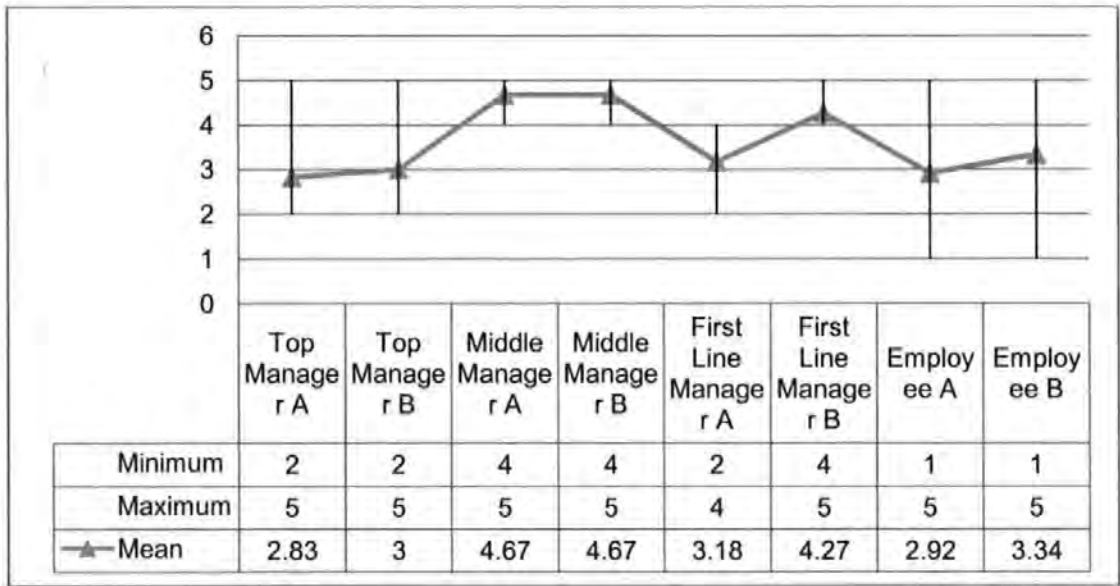


Table 72 survey Part Two, Q45

(Source: Author)

Top manager disagreed with this statement but middle manager were very consistent ($SD < 0.5$) in their agreement with this statement. First line managers from company B were also consistent in their agreement with this statement.

Overall assessment of organisational culture barriers

Middle managers were very clear that promotion of managers is not based on qualifications

Top managers considered that employees did not resist changes to quality management practices, but middle managers disagreed.

Middle managers were very clear that a bureaucratic culture was prevalent in the organisations

Top managers felt that people were appointed to positions because they had skills to undertake the role, but middle managers disagreed with this. Interestingly first line managers from the two companies had opposing views

Top managers thought that employees have difficulty understanding TQM, but middle managers strongly disagreed with this view.

Middle managers were very clear in their view that departments within their organisations used similar operating systems.

Top, middle and first line managers all agreed that family history was not factor in the operational management of organisations.

Middle managers were very clear that employee absenteeism was a problem, but first line managers from company A did not agree with this view.

Middle managers were very clear in their opinion that employees were not working to improve the future of the organisation, but first line managers were equally clear that they disagreed with this view.

Both top and middle managers were very clear that motivation and reward systems were lacking in their organisations

Top, middle and first line managers were clear in their view that employees wanted to follow instructions rather than create proposals in their jobs.

There was no clarity on whether the government was providing support to help organisations implement TQM.

Middle managers were very clear in their view that there is a shortage of studies from government to help guide the organisations in developing a TQM system.

Assessment of results from questionnaire

Unique views of top managers

All views of top managers were related in some way to views expressed by others.

Unique views of middle managers

Only middle managers were clear that a strategic vision for TQM existed within the organisation.

Middle managers were very clear that promotion of managers is not based on qualifications

Middle managers were very clear that a bureaucratic culture was prevalent in the organisations

Middle managers were very clear in their view that departments within their organisations used similar operating systems.

Middle managers were very clear in their view that there is a shortage of studies from government to help guide the organisations in developing a TQM system.

Unique views of first line managers

First line managers were clear in their view that top management does not provide sufficient financial support to apply and improve quality programmes.

First line managers generally considered that training targets achieved their goal

First line managers in Company A were the only group to clearly show that TQM systems are not difficult to learn and implement.

First line managers in company A were very adamant that current technologies and practices in relation to quality were poor.

First line managers from company A were clear that their organisation trains people without a clear purpose.

First line managers from company A were clear that in their organisation TQM was used as a tool to criticise employees.

Unique views of employees

From the employee perspective it is very clear that there is a lack of senior management commitment

There was no clear view on whether quality objectives were clearly identified to employees.

Correlation of top managers views with middle managers

Top and middle managers considered that communication between departments is effective.

Top managers were very opposed to the view that morale in companies was low and this was supported to a less degree by middle managers and employees.

Top managers believed there was cross-function cooperation between departments, but middle managers were of the opposite view.

Top managers believed that employees were involved in the decision making process and this was supported by the employees themselves, but middle managers were of the opposite view.

Top managers agreed that there is no clear customer feedback system but middle managers were of the opposite opinion.

Top managers did not see TQM as an additional workload to established QM processes but middle managers were of the opposite view.

Top and middle managers both agree that management problems are not well analysed to discover the reason behind the problems.

Top and middle managers both considered that organisations had the proper structure to implement TQM.

Top and middle managers considered that they had provided good communications to employees generally, but first line managers from company A were adamant that this was not the case.

Top and middle managers were very adamant that they provided clear leadership on quality issues.

Middle managers were adamant that top managers were not willing to adopt the TQM concept.

Top managers thought that there was a good level of expertise in TQM generally within the industry, but middle managers were adamant that this was not the case. Interestingly first line managers from company A agreed with top managers.

Top, middle and first line managers were all very clear that the industry does not allow time for TQM.

Top managers considered that employees did not resist changes to quality management practices, but middle managers disagreed.

Top managers felt that people were appointed to positions because they had skills to undertake the role, but middle managers disagreed with this. Interestingly first line managers from the two companies had opposing views

Top managers thought that employees have difficulty understanding TQM, but middle managers strongly disagreed with this view.

Top, middle and first line managers all agreed that family history was not a factor in the operational management of organisations.

Both top and middle managers were very clear that motivation and reward systems were lacking in their organisations

Top, middle and first line managers were clear in their view that employees wanted to follow instructions rather than create proposals in their jobs.

Correlation of top managers' views with first line managers

First line managers were clear in their view that top management does not provide sufficient financial support to apply and improve quality programmes.

Top managers consider that there is enough information on TQM within organisations, but first line managers disagree.

Top managers considered that there were sufficient and well qualified consultants on TQM within the sector, but first line managers from company A were adamant that this was not the case.

Top and middle managers considered that they had provided good communications to employees generally, but first line managers from company A were adamant that this was not the case.

Top managers thought that there was a good level of expertise in TQM generally within the industry, but middle managers were adamant that this was not the case. Interestingly first line managers from company A agreed with top managers.

Top, middle and first line managers were all very clear that the industry does not allow time for TQM.

Top managers felt that people were appointed to positions because they had skills to undertake the role, but middle managers disagreed with this. Interestingly first line managers from the two companies had opposing views

Top, middle and first line managers all agreed that family history was not factor in the operational management of organisations.

Top, middle and first line managers were clear in their view that employees wanted to follow instructions rather than create proposals in their jobs.

Correlation of middle managers with first line managers

Top and middle managers considered that they had provided good communications to employees generally, but first line managers from company A were adamant that this was not the case.

Top managers thought that there was a good levels of expertise in TQM generally within the industry, but middle managers were adamant that this was not the case. Interestingly first line managers from company A agreed with top managers.

Top managers felt that people were appointed to positions because they had skills to undertake the role, but middle managers disagreed with this. Interestingly first line managers from the two companies had opposing views

Top, middle and first line managers all agreed that family history was not a factor in the operational management of organisations.

Middle managers were very clear that employee absenteeism was a problem, but first line managers from company A did not agree with this view.

Middle managers were very clear in their opinion that employees were not working to improve the future of the organisation, but first line managers were equally clear that they disagreed with this view.

Top, middle and first line managers were clear in their view that employees wanted to follow instructions rather than create proposals in their jobs.

5.3 Summary of the case study findings

The case study company (A and B) at all levels the answers from the interview clearly explain that organisational levels assessment of barriers exists. From the theory studied in chapter two, it can be said that the evaluated effectiveness this fact is supported by the result from the questionnaire. The majority stated that there was a difficulty to change from the existing system, which needs a change in approach and procedures to convey the TQM requirements. In similarity, the same question of barriers encountered the company in implementation of TQM was asked to the twenty-two first line manager outlined that lack of awareness of TQM through employees and lack of understanding the TQM ' purposes and benefits. All levels of the respondents revealed that organisational culture was a problem in the implementation process. Limited financial resources were cited by many respondents when they said that managers just require extra work from their subordinates without any reward system. The majority of them stated that there was a difficulty to changing the existing system and the company was still being managed with a traditional functional approach. Some of the question revealed that the company is facing difficulty in governmental departments' requirements Also; they point out that the promotion of directors and managers of the departments in the organisation not based on qualification. All the middle management company (A and B) respondents outlined that there was lack of information and communication to all levels of both company routes where this necessary information could flow is a barrier to implement TQM. Type of barriers, in company (A and B) that retard it to implement the TQM,

Chapter 6 – Interviews

6.3.1 The following is a sample of the interview conducted at all levels

Q1- Are there any concepts and principles for TQM being implemented and how?

From the interview with the Companies (A and B), Six first-line managers (4 from A and 2 from B) agreed and stated that all levels of the company do not understand TQM and has little knowledge about it. Does this means that majority of the respondents don't know much about TQM? Meagre Knowledge of TQM is another important barrier in the implementation process. The Top managers in both companies (A and B) give an indication that the concepts of TQM have not been implemented in Libya at a construction organisation's levels. Also that the knowledge of middle and first –line managers and employees about the implementation of TQM is low meaning that TQM has never been a subject that has been seriously addressed by Libyan Construction Companies with no strategy for implementing TQM principles was ever adopted. These show that it needs a helping hand in understanding for the top management and then to all levels. E.g., the all top managers and middle managers in both the companies (A and B) said that the organisations will carry out those TQM principles which are essential in the ISO 9001:2000 standards. Also it is seen that unless the organisation is completely aware of TQM principles they will not be implemented totality. The quality system manager noted that the new ISO 9001:2000 standard focuses on process flow that can help to identify what needs to be controlled. This is unlike the old ISO 9001:1994 standard which focused on individual quality elements, thus failing to highlight the relationship between them. They felt that the ISO 9000 series was sufficient to address their needs and that they did not want to subject their employees to anymore standards.

Q2 - What are the barriers affecting the knowledge and understanding of Libya's Construction Company on TQM philosophy and why?

The feedback from six management levels respondents of case study (A and B) (4 from A and 2 from B) pointed out that only a few of them have good knowledge about TQM. The majority of the respondents have only a little bit of knowledge from what they have understood from the introductory lectures. One of top managers and one of the middle managers in company A and one of the middle managers in company B attended only a part of an awareness programme due to them being busy, as they said in the interviews. Majority of the company's staff knew about TQM just from the awareness training programs. It can be implied that despite there being a few training programs at the preparation stage, staff from case study A did not understand enough about TQM which resulted and showed a lack of staff awareness. This made case study (A) hire an external consultant from outside the country to help it with the implementation process. Another reason is that, TQM is almost absent in Libyan educational system except at the engineering departments in Engineering Faculties at some Universities and a few higher engineering institutes. Also, there is no national quality programme in the country. These could affect an understanding of TQM issues in both the case studies. Three middle managers (2 from A and 1 from B) said or at least outlined that poor education and training programs represent a major barrier in the implementation of TQM in Libyan construction organisations. From these findings, the lack of TQM awareness is a common barrier in developed and developing countries, all the same.

Q3- What are barriers facing the organisation to start implementing TQM? And how

From the interview at all levels (5 from A top manager, middle manager, first line managers and employees and 2 from B middle manager and first line) it was said that the most important element of a team is its members; people with knowledge and experience relevant to the process are required, with a limit of members, to keep the team small enough to be manageable. This means that there is lack of working in terms of team and an absence of leadership. Three

Top managers from the company (A and B) (2 from A and 1 from B) stated that Industrial sectors in Libya like all the other sectors went through several changes in the last fifteen years. Some time they follow the Ministry of Industry, in the next year they follow the Ministry of Service. Such frequent change of the ownership was the cause for the changes in the organisation structure. The respondents outlined that the presence of a hierarchical traditional structure makes the management follow the organisational structure. Mostly, the coordination between departments in the two case study companies carried out through formal letters between different departments. For example, departments of different directorates in the organisation should go through managers officially to follow approved organisational structure and adhere with authorities given to the head of every department. Every department according to job description and organisational structure has its responsibilities and authorities. The head of any department believes that he has to follow the written department's job description to be a successful head, to satisfy management and to show that he is a qualified person.

A general daily meeting in both the case study (A and B) occurred between general managers and middle managers, to discuss the company's activities. But no daily and monthly meeting in the middle departments was issued to communicate quality information amongst the entire organisation's staff. Also, there was no effort to communicate the importance of TQM implementation between managers and supervisors or between supervisors and employees.

Also the study confirms the affect of laws issued by the Libyan authorities such as Act number 15/1981, which results in an unwillingness to take responsibility because of financial problems. From the interviews, it is seen that all levels believe the organisation's culture to provide the basis for form and modify behaviours, attitudes and values deem very important to the power structure of the organisation and the problem how to deal with. The management in the case study (A and B) was poor in the exchange of ideas and information with employees as an effective leadership tool to implement the system successfully. The respondents highlighted that there is a lack of employee involvement and empowerment and no continuity in training programs and concentration of

training programs on how the people in the company can maintain the system. These were the other forms of top management's lack of commitment and the lack of leadership. We focus on high-commitment broad principles, in both companies (A and B) which guide the choice of specific practices and assure that the organisation introduces high-commitment practices comprehensively to promote the required employee attitude and behaviours that guarantee the success of TQM initiatives. First line managers and employees must be kept motivated and encouraged to help smooth out the initial transitional stage in TQM implementation. This can be achieved by strong leadership, training and involvement from staff at all levels.

Q4- from your experience in this field, what are the barriers facing the implementation of this system in Libyan construction industry and how?

From the interview with the quality systems managers about the barriers effect TQM to be implemented says if implemented correctly should require manpower resources and top management commitment by training and educate them about TQM concepts and principles.

All the case study (A and B) staffs considers that the management representative as a general director is responsible to bring them quality awareness, knowing areas needed improvement, provide resources required by the system and can guide the company during all processes for TQM. In fact, the middle manager in both company (A and B) indicated that appointment of the general director as a management representative was a barrier affecting implementation of TQM because the management representative is responsible for ensuring that the TQM is appropriate and maintained, is responsible for promoting quality awareness, to monitor the performance of the system and needs to report formally to the management review team.

In addition to those barriers, management may encounter the problem of not considering TQM as continuous programme.

From the interview with the top and middle managers about the barriers effect TQM to be implemented (2 top managers from company A and 1 from company B) and (3 middle managers from company A and 2 from company B) said the

biggest hurdle for the company is to change is to look for the culture and how to change culture to support TQM program e.g. there are some rumours in the company to change the Top management or change the companies' activates or close down for it. Also said presence of family and friend relationships in the country. This is gave the employees to look for what happening to them after that. Form the all top managers said employees and middle managers to put across their dissatisfaction by delaying or neglecting in doing something.

From the interviews in both companies (A and B) in all levels mangers fail to understand the concept and the philosophy behind TQM. The first-line manager and employees stated that family's historical relationship with the government,

Influence in all levels managers. From the interviews first-line managers traditionally has been as the authority within a particular department on site (e.g. operation team, work supervisor) they are responsible for telling the workforce what to do and they are very confused to put another way in the job. This meant that the company sets unreasonable objectives and lack of understanding of each others' perspectives.

The success of a TQM programme depends on supervision being given the tools, skills and ability to manage the process.

Q5 - what you think in your opinion the factors to help your work?

From the interview Company (A and B) they believed that integrated job functions as a team work by strategic vision of the companies. Some respondents cited that some tasks need a greater level of skill and knowledgeable employees. Others stated that the presence of low education inhibited empowerment of employees. There was a strong tendency for these members to be on their guard against their colleagues. Also, some respondents revealed that the coordination between departments was carried out through formal letters between different departments. Also from the interview all the first-line managers and employees in both companies (A and B) stated that the basis of the top management position was wrong with right person not in the right position. The top management, middle management and supervisors in case study (A and B) feel that the lack of financial support from

the government has affected the start of implementation of the system as the company belong to the public sector. Also the management responses in case study A pointed out that the existing policies like the law number 15/1981 (restriction of Libyan employees' salaries in public sector organisations). Some middle manager and all the first-line managers in both companies (A and B) stated that open communications about financial presentation in the companies with motivation the factors to help our work.

Q6- Have quality responsibilities and authorities defined and deployment in the organisation? How?

The feedback of seven first-line managers' respondents of case study (A and B) pointed out that Libyan managers are unlikely to find it easy to delegate authority, or to be flexible in executing decision or to respond well to criticisms. Employees did not wish to be involved in taking decisions in their job as a fear from legal accountability from these departments. The top management who are responsible for any problems are accountable to these controller departments. Hence, they found it difficult to empower the employees in decision making. The Libyan authorities thought that this number of controller departments can control and avoid any kind of fraud such as financial cheating. Thus it can be implied that the multiplicity of controller departments in the country affected the TQM implementation through lack of employee involvement and empowerment. The interviewed respondents in case study A identified that the political structure (socialism) of the country and other imposed policies and procedures resulted to overstaff (featherbedding system) in the organisation of an unskilled Libyan workforce. In the 1980s, the Libyan government departments, which controlled public sector organisations, imposed some policies and procedures on the organisations by appointing or recruiting some Libyan people, either skilled or not, to be employed in those organisations.

This research has highlighted that the two case study companies (A and B) were not under pressure from the Libyan authorities and external customers to implement TQM. Moreover the successful implementation of TQM was largely due to the commitment of the top management. In terms of employee

empowerment, employees are aware of their responsibilities and obligations, including aspects of TQM. From the interview first-line managers said there is an obsession for managers to get visits and hospitality. Also the employees said management etiquette and there is no mutual trust between department, affect any system and this is our opinion. This is one of the ways in which the organisation cultivates the TQM culture among its people. The study has useful implications for the Libyan authorities to encourage their organisations to adopt TQM programme, to support the Libyan economy.

Q7- Are there any constant inside or outside the organisation related to quality? Why?

The feedback of most of the levels respondents of case study (A and B) said no continuous to give them advises to set goals and targets. This is because it can be seen that they are very happy from the interviews. The other implication is that while TQM organisations should take into account the systems-levels features as a part of their approach, as far as this approach guarantees employee commitment towards quality goals, it can be expected that the influence of TQM on organisational results will be greater when its implementation is supported by a high-commitment strategy. And they said improvement possibilities can be implemented by the firm in the future by adopting a step-by step approach. The top managers for company (A and B) also say that for small sized firms to compete effectively and survive in confused markets, it is very important to implement some TQM implementation practices in the future, adopting a step-by-step approach, which can contribute to the firms' long-term success.

Q8- Theme inquired into the PEST analysis (politics, economic, socio-cultural, technological) affecting programmed about TQM? How?

From the interview with all the levels about political, economic, Socio-cultural, and technological factors effecting the strategy programmed about TQM they agreed towards the changes taking place and some of the barriers to implement TQM programme may also be inferred from its potential disadvantages. The top managers in company A did not agree whereas they agreed about the cultural

barriers being very important in the implementation of a successful TQM programme. In company B the top manager did not agree and two middle managers strongly agreed. The study revealed no changes in the management system, bureaucracy, lack of managerial efficiency and corruption were the direct cause of the delay encountered in the Libyan companies and affect in the implementation of TQM programme. In sum, organisational commitment seems to be important because when the employees are not committed it also results in a negative behaviour.

All first line managers (A and B) stated that the use of quality tools and techniques such as SPC (statistic process control) and the development of systems to measure satisfaction of internal and external customers had a limited usage. The need for change has driven initiatives in the public sector as the pressure to improve performance has increased. Also, the government can provide a strong support for the spread of TQM by lending moral support and legitimising quality training programs and licensing of instruction. This meant that there is a shortage of lecturers and consultants with a real understanding of the fundamentals of TQM. Managers insist that new technology is an essential element in the survival of their companies.

Q9- Whether the quality responsibilities and authorities were identified?

A question was asked to the interviewees of middle management and first line managers (A and B) whether the quality responsibilities and authorities were identified and deployed in all the company. The findings were that all middle managers' responses were yes but not being followed. The first line managers' responses were yes and proof is shown through the department's routine manual and top management needs to be involved in the management review process to understand what goes on within the organisation and understanding the current and future needs. Also, they gave another reason when they responded that according to the Libyan legislations, the management have to follow the organisational structure and the job description to deal with employees and the top management must provide the necessary resources to fulfil the company's quality objectives.

Q10- Whether any Libyan authorities departments push the company to implement the TQM programme?

A question was asked to the company's (A and B) top management in the interviews whether any Libyan authorities departments push the company to implement the TQM programme. All the answers came no and there is lack of financial support to start the QMS implementation. The respondents outlined in their responses that the effect of lack of Libyan authorities' support on implemented TQM programme in the company was unavailability of financial resources and no financial support from the government made the management not thinking yet to seek the TQM programme or there is Governmental budget restrictions. Also the first line managers and employees in both companies pointed out that there are no specialist journals to read to get knowledge about that system and no any other informatics source exists to create knowledge regarding the QMS and TQM. The interviewed respondents in case studies A&B identified that the political structure (socialism) of the country and other imposed policies and procedures resulted to overstaff (featherbedding system) in the organisation of an unskilled Libyan workforce.

Q11- What you think about TQM programme?

All levels said after explanation to them what TQM is about and from the questioners nine mounts ago TQM would be very helpful because everything will be done correctly right from the start with the TQM principles. Employees said we are ignored by the company and are not managed as assets with no opportunities for involvement. Furthermore, employees' knowledge, experience and ideas may improve the business strategy and may secure a good practical implementation.

Employees in all levels in company A and B need to make sure that their leaders want them to participate. They need to know that their leaders are willing to listen to them, support them, and remove barriers to their ideas. E.g. there is a strong preference for a person-oriented approach rather than a task-oriented approach in managerial activities. They said the top management should make sure that everybody within the company from top to bottom is clear

about the long-term goals. This affects management style, quality of communication and indeed everything that is done within a company.

From the employees responded the question to the second levels and middle managers about the idea and the comment from the employees? The middle managers and first line managers' responses (A and B) argued that employee involvement and empowerment in decision making was demonstrated in the shop floor. And should be rewarded to encourage responsibility to make decision, but power and authority to make decisions! Meaning high scores on the power distance dimension and the boss is always right and high centralisation of power. The employee can take his decision to stop the production process if anything unusual happened and then call his supervisor to discuss with him what he should do.

The feedback from the middle management respondents in company (A) highlighted three reasons for not having enough TQM and QMS knowledge mentioned below:

- No TQM awareness programs have been introduced to them inside the company.
- No opportunity was given to them from top management to attend training course and workshops in the field outside the company.
- The chance to attend the training programs related to quality is given usually to quality department staff only.

The feedback from the middle management respondents in company (B) is similar. Relating to the management experience in this field, a question was asked about barriers facing the Libyan construction industry to implement TQM programme. Their responses were as below:

- Lack of awareness of the TQM at most of the Libyan authorities' departments and most organisations.
- There is no local calibration agency working in the country.
- Lack of understanding of TQM programme.

- Lack of specialist local consultancy bureaus to help in implementing TQM.
- There are no experts in implementation of QMS in the organisations.
- Lack of knowledge about TQM and culture

Another question was asked to all levels about any difficulties facing the companies. The respondents' answers are:

- Lack of financial support from the government.
- No skilled staff in the field of TQM implementation and calibration issues.
- No presence of calibration laboratories in the centre.
- There are no training programs to the centre's staff relating to quality and calibration issues.
- Lack of knowledge about TQM and culture.
- The interview is the main method to collect primary data of this research and to get an in-depth understanding of the barriers that affected TQM

6.3.2 Interviews overcoming barriers

No one of the first line managers and employees in both companies attended or has been attending any related program, except two from company (A) who said they attended one training program how to write quality reports, those two respondents are working in the quality department. They also pointed out that no awareness programs related to the TQM took place in the company. Only one of the supervisors is aware that QMS and TQM is the quality system to improve management performance when followed by all departments in the organisation.

A question was asked to four levels during semi-structured interviews conducted with them 'how the organisation overcame the barriers to implementation TQM programme. The three methods mentioned by top management (company A and B) responses were as below:

- Continuous and intensive awareness programs to all staff.
- The respondents cited that the internal auditing is one of the methods used to overcome many barriers by the help from the consultant.

The middle managers in both company (A and B) and the first line managers (company A&B) however cited some more methods as below:

- The concentration of employees' awareness programs regarding the importance of the system.
- Foreign consultant that has a good experience in TQM and QMS issues.
- Distributing of quality policy and objectives in every clear place everywhere in the company to give the employees the opportunity to know and read them.
- By taking corrective actions and implementing them.
- The first line managers and the employees in both company (A and B) highlighted some methods used to overcome the implementation TQM barriers as below. Some of the respondents said that some of the barriers have not yet been fully overcome.
- The top management commitment towards implementation of the system.
- By more training programs relevant to TQM and QMS.
- Through intensive internal audits.
- The help of a consultant.

Chapter 7 – Exploring the influences and barriers to TQM in Libya

7.0 Introduction

Chapter five presented data and initial analyses to help in identifying barriers to effective implementation of TQM in Libyan Construction Companies (A and B). This chapter provides further discussion the barriers to TQM implementation. The research findings will be discussed in depth, in the light of the literature review of TQM in order to reveal the extent of the barriers to TQM that have been discovered at the Libyan construction company (A and B). Given the aim and objectives stated in Chapter one and framework in chapter two, the opinions of management and employees at Libyan construction regarding TQM programmed. This chapter highlights those barriers, which appear when an organisation ignores the TQM knowledge and understand, or simply believes that for them, it is not essential as finding in chapter five part one and those barriers in part two with interview result. The conceptual framework (Figure 9) designed by the researcher after a thorough review of the literature was used to organise the findings from the study at Libyan construction company (A and B).

7.1.1 Barriers of Understanding the TQM knowledge

Knowledge is a very important barrier to a community's potential growth. The results provided in chapter 5, show that the first line managers agreed with the statement to a higher extent than other groups, which suggests that they have a better understanding of TQM than the other groups. However the results of rating the statement indicate that a small percentage, 22% from A and 19% from B, of the respondents have an understanding of TQM, which means that the majority of the respondents' do not know much about TQM. According to the literature review, knowledge of TQM is one of the most important barriers to overcome in the implementation process, this finding is similar to that found in

literature by Wong and Fung (1999), Al-Kahalifa and Aspinwall (2000), Does *et.al* (1997) and Lewis (1992). The results of the extent to which the respondents agreed with the statement indicate that none of the respondents agreed with the statement whilst all the respondents either disagreed or were neutral about whether or not that TQM or its concepts have been implemented in Libyan construction's department. Moreover from the interview result there was no real indication on how well understood are the principles and benefits of TQM, or the role of employees in the process. This suggests limited potential learning opportunities to improve instructors' knowledge of TQM principles according to Alpert *et.al* (1993) who stated that one of the most critical challenges to companies is to provide all staff with a comprehensive understanding of TQM.

The literature suggests that top managers in construction companies need to improve their managerial abilities through continuous learning. To implement TQM, they must first know what it is. Learning TQM is an important step toward implementing it. Top managers should be modest enough to learn from their employees and value the ability of their creativity. Moreover Top managers should strongly encourage employee involvement in Total Quality Management and improvement activities, attach great importance to employees' suggestions, take responsibility for employees' actions as well as those of the people who report to them and are open and willing to listen to the voices of employees.

For the survey it was found that the employees felt excluded from involvement in day to day decision-making processes. Also that throughout company A and B front-line staff are not empowered to make obvious decisions where the policy is clear but the matter still had to be referred upwards with advice given by staff at the counter or over the phone, based on policy, overridden by more senior staff. This finding is similar to that found in literature by Sharp *et.al* (2003) who said that a lack of understanding of the PDCA process was a barrier affecting successful implementation of the new standard in the North West of UK organisations.

From the literature, many authors highlighted the fact that the most important element of a team is its members; people with knowledge and experience

relevant to the process are required, with a limit of 5-10 members, to keep the team small enough to be manageable. Improvement team members must be given the responsibility and authority to represent their part of the organisation in the process. This allows the team to gain respect and knowledge and be seen to have the authority to act in the best interests of the organisation, with respect to the process they are aiming to improve and understanding.

The findings for this research indicated a stronger relationship for both company (A and B) between TQM practices and knowledge, particularly in relation to teamwork. Results should be of interest to the TQM managers in both companies (A and B). This finding increased the understanding on the applicability of TQM practices and the association of these practices to knowledge and understanding in both companies. This finding is similar to that found in Literature by Lee (2001), Lee *et.al* (2003) and McDermot (1999). This study has contributed towards advancing the TQM literature with a better understanding of the view of top manager, middle management, first line manager and employees of TQM practices and their association with knowledge and understanding TQM. In addition the survey results highlighted that there is a shortage of studies from Governmental department to help guide the organisations in developing a TQM system.

7.1.2 Lack of awareness of the purposes and benefits of TQM

Both companies (A and B) have lack in understanding what TQM means to the organisation and they also lack awareness of purposes and benefits of TQM. The interviews give validity to the responses received from the questionnaire that there was agreement between management levels regarding reluctance to admit knowledge of TQM. It is clear to say there is a lack of awareness of TQM in company A and even more limited awareness in case study company B. It appears that the TQM awareness is increased when the company implemented the system. This means that for Libyan companies, improvements in TQM implementation can be achieved through focused training and awareness events. The researcher considers that for this to happen it needs intensive awareness programs through adopting a TQM programmed by the Libyan authorities across the country, by intensive training programs related to TQM.

Such a programme would help companies overcome most of the barriers in implementing and maintaining the processes of the system. This finding is similar to that found in Literature by (Juran, 1986).

According to the literature, TQM is a way of thinking and a set of continuous processes designed to keep on improving systems. For individuals, groups and whole organisations, raising levels of understanding and awareness of TQM will help in discovering better processes. The training programs should concentrate more on the TQM purposes, benefits, understanding of its requirements, using statistical techniques and solving problems. The TQM principles should be communicated effectively to employees. For the survey results of company A and B, the management need to let employees know the benefits and rewards they will gain from the implementation of the system. The most effective vehicle to communicate that information to Libyan companies as a whole appears to be direct contacts and involvements with individual companies. The communication can be done through open discussion, company newsletters and seminars. TQM must be a constitutional requirement for construction firm classification, which would increase awareness of TQM and lead to more educational courses. The lack of professional personnel in the TQM implementation in case studies (A and B) is similar to findings by Hackman *et.al* (1995), Al-Zamani *et.al* (2002), Ngai *et.al* (1997), Waldman (1997) and Hellsten *et.al* (2000)

7.1.3 Lack of employees' awareness of TQM

Both companies (A and B) have lack of employee awareness of TQM as verified in the first line managers' responses to the interviews questions. The companies could make journal or other informatics sources available in the company to help develop knowledge about TQM programmes. Also, it was clear that the management did not nominate themselves to attend that kind of training program. Most of the respondents stated that their job is not related to TQM (As seen in the interviews and Q3 in chapter 5). This finding suggests they are not aware of what TQM means, except some of them who were aware of TQM purposes and benefits. The quality managers were the only ones who had attended one training program related to TQM. Quality awareness education will need to be conducted in order to improve employees' quality

awareness and sense of responsibility. Accordingly, the Governmental departments are usually not keen to deal with companies procedures, but they need to intervene to instil more speed than the usual taken time because of a lack of awareness that the companies have. Government should encourage companies to follow planned and timed schedules in TQM implementation. It should develop a review process conducted on a regular basis (e.g., one time per month) and all employees should accept such education.

It can be expected that employees' sense of responsibilities will be improved as knowledge of TQM spreads with consequently fewer quality problems occurring. Note that the contents of quality awareness education are essential to the success of this activity. It will be more effective to use facts to teach employees rather than only words. For example, the fact that money is lost each year due to employees' low quality awareness and lack of a sense of responsibility is a good example to teach employees. The increased awareness of senior management, who have recognised that quality is an important strategic issue, is reflected as an important focus for all levels of the organisation (Oakland, 2000). Moreover, as Tayyara *et.al* (2000) indicated, a lack of the ISO 9000 standards awareness overall within society is a common barrier in Syrian organisations. This finding is similar to that found in Literature by Waldman (1997). Considerable progress in the knowledge of human resources management should stimulate further development of knowledge about quality management.

7.1.4 Lack of management commitment to TQM

Both companies (A and B) have a lack of management commitment from the top management. This commitment should be based on their understanding, knowledge and belief that TQM is of considerable importance for the organisation. Top management commitment in company (A and B) appeared in the appointment of the general director as a management representative for quality issues and attendance of top management members in management review board meetings to follow up the effectiveness of TQM were types of management commitment and involvement. However, both companies still lacked a comprehensive commitment from top management, which was why

TQM was unable to be implemented in its entirety. There were no commitment to replace the person responsible for implementing TQM and there was no sharing of TQM knowledge. This finding was demonstrated by the fact that the majority of respondents rated this statement as most significant and significant. Lack of management commitment is one of the reasons for the failure of TQM efforts as found by Al-Zamany *et.al* (2002) and Brown *et.al* (1994).

An effective way of communicating the quality policy and objectives is one of the requirements for successful TQM implementation. It means a lack of awareness, as Chin *et.al* (2000) pointed out, in the organisation of the management's quality policy and current status of TQM. The lack in communicating the quality policy and objectives in the company means that the staff and employees do their jobs without a target to achieve the quality objectives. This finding is similar to that of Hackman and Wageman (1995), who outlined that the lack of a shared vision is a barrier to implement TQM in many organisations.

Top management must also accept the responsibility for commitment to a quality policy that deals with the organisation for quality and the satisfaction of customer needs (as seen in Q4 and Q29 in chapter five). This commitment to quality and leadership must be demonstrated by developing and communicating the vision organisation-wide. Top management success is achieved when the rewards of implementing TQM are realized. That is, the tangible business and operating benefits of TQM must be realized by top management as a prerequisite for their serious commitment. This finding is similar to Balzarova *et.al* (2002) who cited that lack of identifying a clear mission as a measurement tool of performance of an organisation is a barrier in successful implementation in some firms in the UK. This finding is also similar to Dale *et.al* (1994). According to Juran (1974) most of the problems associated with quality are attributed to management.

7.1.5 Lack of Government financial support for TQM

For both companies (A and B), the results of the survey show that there is no Government financial support to help the organisation to implement a TQM

system (Q5 and Q16 in chapter five). That the management are provided with the necessary financial support and sufficient resources in the registration process is viewed as important. However there was evidence that the Government struggled to provide the necessary financial resources needed to verify the minimum requirement of the TQM as expressed by middle managers, first line managers and employees in the survey. The Government must provide more financial support to construction firms and engineering offices to achieve TQM and have more cooperation and coordination throughout the organisation. Moreover, from the interview questions, the top management, middle management and supervisors in case study (A and B) feel that the lack of financial support from the Government has affected the start of implementation of the TQM system. But lack of financial resources was a result of budget restrictions in the public sector, the top management respondents said.

The Government budget restriction is a unique barrier in this study and not reported in the literature before. The Libyan authorities thought that the number of controller departments can control and avoid any kind of fraud such as financial cheating, but they also caused a lack of development and improvement programs to existing infrastructure and the work environment as the middle management respondents indicated. According to Curry *et.al* (2002), who quoted Mersha (1997), Governments in developing countries should provide an appropriate environment with reasonable infrastructure for industry as a whole. Other general studies such as Brown *et al.* (1998) revealed that financial support from Governments is needed to push forward developments in organisations.

7.1.6 PEST pressures and their effects on TQM

In both companies (A and B), and from both the interviews and the questionnaire, the middle manager and first line managers were in line with their responses (As seen in the statement Q6 in chapter 5). In terms of TQM, the companies believed that political and economic structures, functions and processes, time and the political and economic space are decisive determinants for local and regional development effecting the business environment.

According to feedback from all the levels in the companies of the two case studies, issued laws by the Libyan authorities (such as Act number 15/1981) resulted in an unwillingness of managers to take responsibility. The interviewed respondents in case studies A and B identified that the political structure (socialism) of the country and other imposed policies and procedures resulted in overstaffing (featherbedding system) in the organisation and an unskilled Libyan workforce.

This finding is similar to one Asian country's study done by Glover *et.al* (2000), which pointed out that this featherbedding system can help to avoid unemployment but makes the organisations overstaffed. Likewise, Madu (1997) mentioned that the unskilled employees are another inhibitor to implementing the QMS-ISO 9000 in organisations in India, China and Mexico. Madu (1997) and Taylor (1995) similarly cited that the policy makers in developing countries should be aware that unskilled manpower and others affect work performance and, as a result, quality programs may not be easily implemented.

Local and regional markets are based on different criteria and Information Technology is being introduced in Government to enhance control of key resources such as finance and improve efficiency. Computers are increasingly viewed as solutions to the management of information required to deliver effective public services and to attract foreign investors into Libya. Also the fact that economic changes have a much more important place in the Government's policy than environmental problems has had its impact. Environmental protection policies that are presently employed are a driving force for improvements to some extent, but the system could be more efficient. All planning within the construction companies requires a finger on the pulse of external change. A change of Government may influence programs, or new Government policy may have an impact on the selection and promotion decisions of future managers.

It has been mentioned already that there is no Government financial support to help organisations implement a TQM system, by motivation of all the staff to work to achieve better quality is recognisable. Most of the respondents in both

companies A and B agree with this question and interviews question. Take for example, the recent Government commitment to increase workforce diversity through the development of a diversity improvement plan. This should have a direct impact on the future management profile across the Public sector, but other external forces, such as a strong economy, may limit the number of external staff available to Libyan companies. Technical and social changes may also influence both the demand for outputs and services as well as the supply of suitable personnel for tomorrow's management.

Put into context, this study may be contrast against other wider studies such as Nesan and Holt (1999) who found that organisations in the construction industry tended to be reactive to environmental changes being imposed on them (due to economic, political, social and technological pressures), and as a result the industry has been criticised for its poor performance in relation to other industries. Love et al. (1998) suggest that TQM can be used to create an organisation where change is considered the norm, rather than a reactionary response to environmental pressures. This study's finding is similar also to findings in literature reviewed by Madu (1997), Curry and Kadasah (2002), Yahya and Goh (2001), Tichey (1983), Jobber (2001) and Wright *et.al* (1996).

7.1.7 Lack of an effective communication system to support TQM

Both companies (A and B) (As seen in Q25 in chapter 5) have a lack of communication from the feedback of the respondents. The internal communication system was very poorly implemented in the two companies, largely because of the presence of authoritative managers. That resulted in a difficulty for the employees to have a discussion or debate or have the courage to defend their opinions with their managers about the issues relating to quality. Also, managers think they will lose their superiority and respect if they have direct communications with employees. In addition, most responses from interviewed respondents indicated that the presence of a hierarchical traditional structure in the management follows the organisational structure. It created a problem for the employees to communicate to top management. This finding is similar to findings by Australian and Asian's studies conducted out by Glover and Siu (2000) and Lee *et al.* (1999). They identified that no cross-functional

cooperation within the organisation and every department with its individual responsibility is a problem facing the company. From both companies A and B, this research found that effective communication played a significant role in ensuring a successful operation. From the interviews most of the employees agreed that listening skills, as part of effective communication, is one of the key competencies that a manager ought to possess at all times. Before, during and after the implementation of change, managers should listen to employees' opinions and understand their perspective and feelings on the imposed changes.

This finding is similar and supports other findings in Arabic, Western, South America, Australia, New Zealand and Asian studies. The lack of open lines of communication between management and the employees affected employee involvement in the company, which affected the effectiveness of implementation of the Total quality management (TQM) in the companies.

7.1.8 Lack of high morale and its effect on TQM

The results of the barriers questionnaire show that, in both companies A and B, the majority of respondents were of opinion that the management of Libyan construction were low in morale. Top managers, middle managers and employees were mostly of this view. For the other level, first-line managers, it could be due also to the lack of effective communication between the workforce and management (As seen in Q9 in chapter 5). The barriers of low morale are consistent with the finding of Nwabueze and Kanji's (1997) study on the implementation of TQM in the NHS in the UK, which revealed that employees' low morale was one of the major barriers to the implementation of TQM in a hospital.

7.1.9 Lack of cross-functional cooperation to support TQM

This research found, from the results of the case study survey, that the significance of team work concepts in the two Libyan construction companies must be given greater attention. The results indicated that Libyan companies do not identify and train their best people to be working as a team. However, the overall results of rating the question indicated that, in addition, companies A and

B, were not making sufficiently serious efforts to identify general training needs or TQM training needs. Such human resource practices include training and altered compensation. Formal training can be used to give employees the specific skills needed to work effectively in teams and to apply complex analytic techniques. Moreover if a Libyan company does not identify that TQM requires alterations in the organisation of work to empower employees to participate in front-line decision making and to facilitate co-operation through teamwork structures and suggestion systems, it will not get off the ground.

For Libyan companies to solve or investigate cross-functional problems or generate improvement opportunities associated with many functions or departments, as seen in Q10 in chapter 5, there was some awareness of the problems. Most top management agreed that there is a need to delegate to the team and was therefore committed to assigning it sufficient resources. Through cross-functional teams, different people from different departments work together and learn from each other. Thus, problems can be easily solved. Cross-functional teams are effective in solving cross-functional problems (Dale, 1999). This finding is similar to findings in literature review by Australian and Asian's studies found out by Glover and Siu (2000) and Lee *et.al* (1999).

7.1.10 Lack of employee involvement in decision making for TQM

In both the companies (A and B) the majority of respondents agreed with the statement that employees lack involvement in decision making, solving problems and assessing of processes. Employees felt they were doing hard work in TQM implementation without any reward from the top management. It can be implied that the companies were suffering from workforce turnover, which resulted in the appointment of personnel of low levels of TQM awareness in some positions to substitute those who left. This research also found that insufficient employee education level, low employee skills and high employee turnover were barriers to implement TQM, as seen in Q11 of the barriers questionnaire. The co-operation of everyone at every interface is necessary to achieve improvements in performance, which can only happen if the top management is really committed. This finding is similar to findings in studies

conducted by Costin (1994), Hoyle (2001), Ludwig-Baker (1999) and Hele (2003).

7.1. 11 Lack of a company role for TQM

Both companies (A and B) lack the role of a TQM manager from the feedback of respondents the researcher's observation. In addition the documentation system related to quality was very weak and therefore the quality objectives are clearly identified to employees. Work procedures and instructions have not been prepared in the company because they do not understand their importance, as seen in Q36. Many people are appointed to positions without having the skills to undertake the role effectively and they experience difficulty in understanding and interpreting the TQM requirements because of the lack of availability of the systems and guidelines in the Arabic language.

From the findings, the manager is seen as the one who carries out change and employee has to accept and adopt it. Effective communication, employee's attitude and perception of manager's actions, and harmonious working environment play significant role in achieving better organisational performance. Therefore the creation of a specific management role for TQM is very important. This finding is similar to findings in literature review by Deming, Juran, Crosby, Feigenbaum, and others. However, there is value in raising constructive criticism about the paths taken, or not taken, in the TQM process.

7.1.12 Lack of a customer feedback system to improve TQM

The results of the barriers survey in both companies (A and B) show that the majority of respondents were of opinion that the management do not have a customer feedback system. The majority with this opinion were top managers and employees the other two levels (first-line managers and middle managers) still agreed to a high extent but less than top managers and employees. Therefore, there is may be seen that there is no customer feedback system to all level of staff, which may result in a lack of cooperation from customers (As seen in Q14). This finding is similar to studies in Western Europe, Australia and Asian. Furthermore, Samson (1997) pointed out that lack of sharing information between management and employees and customers is needed to close the

loop between improvement actions and their consequences, therefore it can be seen as a barrier to implement TQM.

7.1.13 Lack of education and training in TQM

The feedback from the respondents in case studies (A and B), revealed that there was a high percentage of employees with a low education level. This was thought to have an effect on the ability of the company to implement TQM. There was a feeling that employees in the public sector generally have low education levels, but are give jobs to avoid unemployment in the country, as part of social relationships in Libyan society. As a result, these employees could not understand the information related to TQM programmes, given to them by managers or other people in company departments. The presence of employees with low education level in the case study (A and B) had a direct impact on the effective implementation of TQM. This finding is similar to findings in literature review by Adair (1983), Peters (1987) and Sun (2000).

7.1.14 Lack of information about TQM

Both companies (A and B) have a lack of information related to the TQM generally. This point relates to the others made about that lack of education and training programs, or follow-up refresher training on the updated issues of the TQM implementation. The result is a weak understanding about the importance of quality in international trade and globalisation of world markets. This means also that there is a lack of the new information related to the TQM implementation. This finding is similar to findings in literature review by Deming (1986), and worldwide, there are several Quality Awards such as the Deming Prize (1996) in Japan, the European Quality Award (1994) in Europe, and the Malcolm Baldrige National Quality Award (1999) in the United States of America. Each award model is based on a perceived model of TQM and provides a good understanding of the TQM philosophy, principles, and practices and could act as a good example for Libyan companies to follow.

7.1.15 Lack of strategic vision for TQM

In both companies (A and B), the results of the barriers survey and the interviews show that the majority of respondents were of opinion that the

management of Libyan construction does not have a long-term vision and that would result in the effective implementation of TQM. This result was most evident within the top and middle managers of the companies (A and B). The top and middle managers recognized that there is lack of long-term vision at their level. It was clear from the survey that management problems were not analysed to know the reason behind these problems (as seen in Q20 and Q21) and TQM systems were perceived as too difficult to learn and implement. This lack of vision could be due to the lack of appropriate understanding of the organisation's long-term plans and objectives, e.g. vision, mission and strategy. However no proper organisational structure has been developed to implement TQM (as seen in Q22).

In addition to the lack of a long-term vision, some respondents suggested that a lack of financial resources was an additional barrier to the TQM implementation in Libyan Construction Company (as seen in Q16). Top management did not provide financial support to the employees to apply and improve quality programs. Respondents were of the opinion that the management would be unwilling to invest in improvement programmes, such as TQM. According to Wilkinson et al (1994) the cost constraints such as those highlighted by this research was one of the major difficulties faced by the organisations in the UK in their quality improvement initiatives.

The importance of identifying and sharing the company's vision and mission was mentioned by many researchers in the literature, for example, Balzarova *et.al* (2002) cited that lack of identifying a clear mission as a measurement tool of performance of an organisation is a barrier in successful implementation in some firms in the UK. The finding from this research is similar to that of Quazi *et.al* (2002) who outlined that a lack of shared vision is a barrier to implement TQM in many organisations.

Also the company mission statement should clearly relate to quality and associated measurable effects with proper resource deployment and review systems are clear on the organisation's vision for the future and stay focused on it. TQM can be a powerful technique for unleashing employee creativity and potential, but also in reducing bureaucracy. Leaders must take responsibility for

preparing, reviewing and monitoring the policy, plus take part in regular improvements of it to ensure it is understood at all levels of the organisation. This finding is similar to findings in literature review by Arnold (1994), Flanagan *et.al* (1998), Low *et.al* (1996).

7.1.16 Lack of appropriate technical knowledge about TQM

Both companies (A and B), as seen in Q23 in chapter 5, have a Lack of appropriate technical knowledge to use statistical techniques in the analysis of quality, which is a barrier to the implement TQM. From the feedback, respondents in the two companies had low understanding of process based thinking and process mapping. Such techniques were limited to TQM committee members only, because they worked directly with the consultant when they were preparing this work. It was difficult for the company's staff to know how to interrelate the processes without the help of the consultant. This finding is similar to findings in literature review by Jobber (2001), (PROJEX LIBYA 2007), Zhao *et.al* (1995) and Yahya and Goh (2001).

7.1.17 Lack of top management leadership on TQM

Both companies (A and B) lack of top management commitment and leadership in terms of TQM implementation (As seen in Q26 and Q27 in chapter five). The commitment of management is necessary to support what the TQM needs, such as setting up of objectives, policies, changing management and changing responsibilities. It is well documented in the literature that if the top management is not willing to adopt the TQM concept, then, without upper-management involvement, commitment, and leadership, any TQM program cannot succeed.

Both companies (A and B) were found to lack leadership in TQM at all levels. The lack of leadership resulted in a lack of the organisation's awareness of the necessity of this kind of manager. In the case studies A and B, the managers do not fully understand their role as leaders in the TQM implementation. This finding is similar to the findings indicated by Quazi *et.al* (2002) who said that a lack of leadership was a barrier to implement ISO 9000 in many organisations. In addition, Ngai and Cheng (1997), indicated that authoritative management is

a barrier facing TQM implementation. This finding also similar to that found out by Atkinson (1990) and Chase (1993). In the researcher's experience, it is a form of Libyan culture where some of the middle managers and first-line managers would not prefer to write their opinions regarding the leadership of their organisation. That was to avoid moral or other kinds of punishment if the executive managers know who and what they pointed out in their responses.

Another finding was that the promotion of directors and managers was often not based on qualifications, with the result that the wrong people were employed in the wrong positions. This is a common cultural barriers affecting TQM implementation and it is difficult to change such existing traditional systems. In such systems managers often do not accept any comments and suggestions from their employees, who understand more about different activities in the company. This finding is similar to the findings by Waldman and Yammarino (1999).

Libyan company managers do not identify that TQM requires alterations in the organisation of work to empower employees to participate in front-line decision making and to facilitate co-operation through teamwork structures and suggestion systems. This finding is similar to findings in literature review by Dale,(1999), Al-Zamany *et.al* (2002), Dory and Lewis (2002) and Juran (1989). Interestingly, Balzarova *et.al* (2002), in contrast to Curry and Kadasah (2002), in an Arabic study, revealed that top management commitment was high, except some managers did not review the quality progress of their departments.

7.1.18 Lack of TQM expertise in the industry generally

The results of the barriers in both companies (A and B) show that the majority of respondents were of the opinion that the Libyan construction industry as a whole lacks expertise in TQM (as seen in Q28 in chapter 5). In both companies (A and B) a high percentage of the first-line managers and employees agreed with the statement. The respondents suggested that the industry does not generally allow time for TQM and this finding is similar to findings in literature review by authors such as Kanji (1995), Kelly (2000), Thiagrayan and Zairi (2001) and Samson (1997).

7.1.19 Lack of motivation and reward for TQM

The feedback from the respondents in the case study companies (A and B) revealed a lack of motivation and reward for TQM (as seen in Q42 in chapter 5). The literature suggests that this is the key issue for any organisation that wants to achieve its goals at the right time and with low cost. The management of the companies in the survey wanted to motivate their employees, which was interpreted to mean that they wanted say or do something that made the employees perform better. They were also of the opinion that employees could perform a whole lot better if they had more motivation. Of course, most people perform far below their potential much of the time and their quest for the right things to say or do is sensible one. Specifically, this study found that the employees saw TQM as a tool to criticise employee performance (as seen in Q32) and high percentage of the first-line managers agreed with employees on this question.

The literature is full of evidence that every manager senses the potential for higher motivation and better performances in his or her people. Every manager suffers from the same frustrations and every manager wishes to motivate employees, because whenever we must accomplish our goals through others their motivation is our greatest limiting factor. The literature also highlights that reward and recognition programmes should be designed to provide the proper motivation for achievement, as not all employees have the same values and needs. Indeed motivational practices become the main tool for many organisations to achieve their goals. These findings are exemplified by studies like Schonberger (1994), Storey (1992), Ellecker (1998) who described the benefits of TQM as needing greater involvement and motivation within a company's workforce.

7.1.20 Lack of skills and training in TQM

As described above, both companies (A and B) revealed that many people were appointed to positions without having the skills to undertake the role effectively. In addition, key staff leave the organisation from time to time and sometimes

internal staff can fill this gap, however, at other times replacement skills will need to be brought into the company. Therefore, it is essential that periodic reviews of the present and future external labour market, particularly for key skill groups, are undertaken.

From the literature review, In Libya, despite the progress made in the education and training programmed and the money spent on its development, its inefficiency remains crucial. Some studies would suggest that this is due to corruption in management, as well as the lack of qualified teachers due to the very low salaries paid to teachers. From the interview questions, both middle and first-line manager in both companies (A and B) stated that the knowledge and skill of an individual are tested on the job. The manager then puts his remarks in the monthly employee assessment file. There appeared to be no planned methods for assessing an individual's attitude, however, all employees were required fill in a response form after attending a training event.

The survey also revealed a need for setting priorities, goals and targets at all levels of the organisation, as well as allocating appropriate resources and training all goals. Training programs about TQM may have been designed with consideration of the organisational goals and job specification, but again, individual needs were ignored in both companies (A and B). Their training strategies were not very learner-centred and relied on the motivation, disposition and skills of the learner to adapt to a learning situation. This area of training program design has been completely ignored by the company, which the result from the company (A and B) clearly reveals. The impact of this clearly shows from the respondent's answers, with a high level of respondents who disagreed with the fact that the sequencing of the training programme was helpful in assisting learning.

The consequence of a poor training system is that employees resist changes to quality management systems in the organisation (as seen in Q34) and from the interview question, the employees refuse to go along with changes to most systems. Training of middle management improves their skill of mentoring and facilitation, and helps pass information and decisions between the lower team levels to top management. This finding is similar to findings in literature review

by Sun (2000), David *et.al* (1997), Deming (1986), Kanji and Wong (1998) and Oakland (1995).

7.1.21 Lack of understanding the culture if TQM

People are a fundamental building block of any TQM organisation. The two case study companies (A and B) stated that a bureaucratic culture is prevalent in the organisation and a high percentage of all levels in the survey agreed with this view. One particular problem that was highlighted was that of employee absenteeism from social events and ceremonies that resulted from family and tribe ties in the Libyan community. A high percentage of employee absenteeism happened usually. The employee absenteeism has a negative effect on the implementation of any TQM system.

The two case studies (A and B) seems to still manage in a traditional style of management where every manager and department has major responsibilities and work separately to the other departments and the top to down management approach still prevail. This type of culture was created by the Government intervention in appointing executive managers. Those were reasons to create a bureaucratic culture in the two companies as the respondents' responses were identified. Thus it can be implied that the territorialism was present in the two case studies, which resulted in resistance to change, due to lack of communication between management and employees. The researcher considers that leadership in the companies sampled was not defined by a manager who deals with the employees as the trainer and teacher, instead of just giving instructions. The lack of a leader-manager resulted in a lack of the organisation's awareness of the necessity of this kind of manager. In case study (A and B), (as seen in the Q33 in chapter 5) the managers do not fully understand their role.

The negative attitudes from employees towards the TQM implementation are a major barrier in the organisations sampled. Employees have difficulty understanding TQM requirements (as seen in Q37). The responses from the interview question highlighted that people in the two case study companies preferred to maintain their jobs without any development or change in production

plans and objectives. The majority of respondents in both companies agreed that the culture and diversity between levels of the organisation have an influence on information flow and communication within the organisation. Nevertheless, the majority of the Libyan companies use the circle network as a communication network, which leads to weak communication between levels. also, most of organisational culture is power culture. This finding is similar to findings in literature review by Cameron and Quinn (1999), Berry (1990), Claver *et.al* (2000), Riley *et.al* (2001) Low *et.al* (2000), Hofstede (1980 and 1991), Tata and Prasad (1998), Oakland (2000), Kirkpatrick (1985), Triandis (1990), Deming *et.al* (1993), Kamensky (1996), Kumar (2006) and Claver *et.al* (200).

7.1.22 Lack of good employee relations to promote TQM

Both companies (A and B) lacked good employee relations (as seen in the Q39 in chapter five). The family history of individuals has a major influence on operational management to all level In the employee relations. Three areas are involved, which are, the Government, the market place and the internal organisation. The Government plays the role of an employer although it has certain objectives and goals which are, social, political, economic and financial. It also affects the behaviours of the employers and the employees, either as individuals or as organisations. This finding is consistent with Wright *et.al* (1996), who stated that employee relations take place in four key areas, which are, actors, who are the people who are taking place, the context, ideology, which is obtained from the state, here we mean the social ideology and the rules. Here, the strategy of the construction company is the most important thing.

It is worth noting one finding relating to employee relations at the national level in Libya. Libyan society still depends on personal relations, family ties, and tribalism, in training and development activities. Moreover, the society still has a traditional way of thinking and consideration. From the interview questions first-line manager and employees stated that family's historical relationship with the Government, help to forward his or her position. Good connection mean an individual need not start from the lowest level, and no punishments may be given to such employees.

7.1.23 Lack of employee empowerment as part of TQM

The management in the company (A and B) was poor in the exchange of ideas and information with employees as an effective leadership tool to implement the system successfully as seen in table 5.14 and table 5.15 show that the respondents highlighted that lack of employee involvement and empowerment and no continuity in training programs and concentration of training programs on how the people in the company can maintain the system, were other forms of lack of top management commitment and lack of leadership. This finding is consistent with Robert (1996) who cited that lack of top management commitment and support will encounter low employee participation and interest in a quality management project. Therefore employees are not working to improve the future of the organisation. It is difficult for any organisation to encourage employees to be involved and participate in an implementation process without continually training and communicating with them. The impact of the top management commitment on the success of any quality initiatives has been reported in Western studies by Ahire et al. (1996) and Srinidhi (1998). Also, Quality Gurus like Deming, Juran and Crosby, who highlighted that the absence of management commitment is one of the reasons for the failure of the TQM implementation. The lack of employee involvement means a lack of continues improvement in the company because employee involvement is important to evaluate work processes on a continual basis to determine improvement opportunities.

7.1.24 Lack of involvement employees in TQM

Both companies (A and B) have a lack of involvement and participation of employees. The feeling from respondents was that TQM systems are too difficult to learn and implement and no proper organisational structure has been developed to implement TQM. The organisational structure in the Libyan construction companies was still centralised, which inhibited the management to involve employees in decision making because the management have to follow the hierarchical structure to deal with employees according to the Libyan legislation. Additionally, from the feedback of respondents in the two case studies, involvement of the workforce in teamwork, in decision-making and

solving problems were not appointed because these tasks need a greater level of skill and knowledgeable employees.

The management did not motivate, reward and encourage the employees, which was a reason that made them not like to be empowered or involved as identified by some of the middle managers and first-line manager's responses of the case study. The present approach to solve the technical or financial problems that face the management in the two case studies was usually carried out by appointing a technical committee from management, without involving employees. The employees and managers in the departments work together in a limited range of areas to identify and solve quality problems in their departments. Therefore the employees strongly agree to having difficulty in understanding TQM requirements (as seen in Q37).

The middle managers and first-line managers in both company (A and B) cited that the top management members feel they are responsible for anything related to the company's performance in front of the controller Governmental departments and they cannot empower the employees in their job. The researcher believes that the lack of involvement and participating of employees in Libyan companies were the reasons of resistance to change among their bad behaviours and attitudes against the system implementation. This finding is similar to findings in literature review by Hoyle (2001), Costin (1994), Cotton (1993), Werther (1981), Brown (1993), Morgan and Murgatroyd (1994), Ishikawa (1985) and Ludwig-Baker (1999).

7.1.25 Resistance to change and its effect on TQM

In both companies (A and B) the managers and employees' resistance to change were indicated as a barrier in implementation and maintaining of the TQM by the four respondent's levels. The behaviours and attitudes against TQM implementation were not satisfied as the top management respondents were highlighted because some middle managers and the employees do not want to follow the procedures required by the system. Thus it can be implied that the employees wanted to escape from new responsibilities. Despite the quality being the responsibility of everybody in the company, the employees

were convinced that quality was not their responsibility; it is the quality department's responsibility. Employees avoid taking responsibility, which might give them trouble with other staff and more work without recognition. Extra work means people may have to learn more information or develop new skills related to TQM issues. Thus it can be implied that the company's management wishes that all quality work should be carried out through the quality department, and then the employees rely on the quality department to take quality responsibility.

This is a kind of lack of top management awareness of the TQM requirements. This finding is similar to findings in Asian countries' studies by Glover and Siu (2000) who discovered that avoidance of responsibilities is acting as resistance to change in Chinese organisations. Also, similar with the findings of Western countries' studies found out by Lipovatz *et.al* (1999), Fuentes *et.al* (2000), Tsim *et.al* (2002), Moser and Bailey (1997) and Macadam (1996) who stated that the employees have a stronger feeling of being controlled by the quality system and they avoid undertaking more responsibilities as the quality system requests. Organisational barriers are caused by organisational structure and process change and threats induced by the environment inside or outside of the organisation. This finding is similar to findings in literature review.

7.1.26 Lack of integration between TQM and existing systems

As seen for both companies (A and B) there is lack of integration between quality information system and existing management information system for all level of management and there is a shortage of studies from Governmental department to help guide the organisation in developing a TQM system. Promotion of directors and managers, not based on qualifications, and wrong people in wrong positions, are common cultural barriers affecting TQM implementation in Libya. The process of TQM development must be thought about as an element of the economic development programme. This process, which includes education and training programs, can provide employment opportunities for increasing national manpower. Consequently, serious efforts should be made in order to create the quantity and quality educated and trained workers. Most respondents to the survey agreed that training means preparing

and qualifying individuals by providing them with necessary skills and knowledge. As the researcher did not originally include the corporate control and corporate pressures in the conceptual framework, this part of the framework needs to be re-configured to take into account the research findings as seen in figure 36. These findings are similar to findings by Western, Australian and Asian's studies by Najmi and Kehoe (2000 and quoted in Laza and Wheaton 1990), Boyett *et.al* (1992), Brown (1993), Katz (1993), Goodman *et.al* (1994), Zangwill (1994), Dale and Cooper (1994) and Tatikonda and Tatikonda (1996).

7.2 The reconceptualised framework

More detailed analysis of this part of the Re-conceptual framework is presented in figure 36 below.

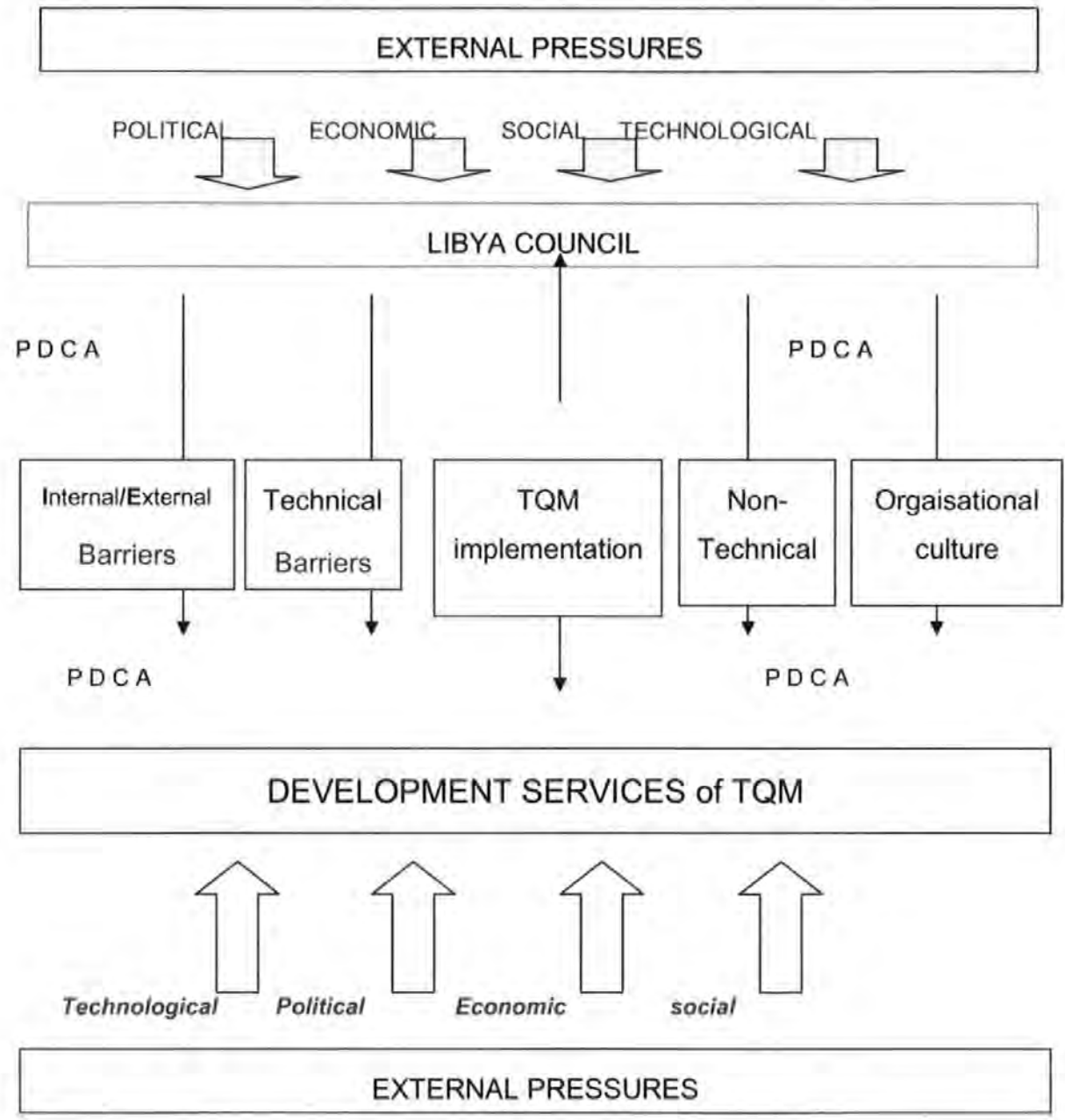


Figure 36 – Reconceptualised Framework
(Source: author)

7.2.1 Overall discussion of the Reconceptualised framework

An understanding of the influences of the all barriers such as external and corporate pressures, choice involved understanding the underlying bases guiding future strategy and generating strategic options for TQM programmed in construction companies (A and B). It is important to have a clear view of the strategy to be followed, but this is not enough. Change will not occur unless there is commitment to change in Libyan Construction Company (A and B) and it is vital to consider how such commitment can be achieved. Economic changes in Libya have a much more important place in the Government's policy than environmental problems has its impact for environmental protection that are presently employed are a driving force for improvements to some extent, but the system could be more efficient.

The nature of the relationship between technology and organisations is as controversial as what is needed to a reconstruction of the concept of technology, which fundamentally re-examines our current notions of technology and its role in organisation. The concept of technology and its role in organisation is needed in order to improve TQM understanding as organisation structure and behaviour; it is the independent influence of technology employed which is most significant.

External changes may occur very rapidly than it was thought. These changes create new opportunities for the companies (A and B) and create big and difficult barriers for others. Gilgeous (1997) suggests that a major difficulty facing any organisation contemplating change is the question of control over external variables. He suggests that it seems evident that environmental forces can always be expected to impact on organisational plans for change, but the difficult thing for management is to control the unfolding events as much as possible, as change progresses. After analysing the research findings the researcher feels that it is important to include the conceptual framework. This will help to regulate the implementation of strategy taking into account influences that were described in strategic analysis. Other external factors such

as a strong economy may limit the number of external staff available. Technical and social changes also influence both the demand for outputs/services as well as the supply of suitable personnel for tomorrow's management.

The TQM manager should make sure that quality teams are empowered and are aware of their responsibilities and duties in achieving the goals set by the quality council. The pressure on its more sought after services is due to the improvement of socio-economic conditions in the country. The main reasons for introducing this new management concept in the department are: to improve its effectiveness and efficiency; to improve its services to various Government ministries, departments, agencies and the public in general; to equip the department to be sensitive to its external environment; to prepare for the department a long term objective; and to advise the department on how to match its internal capabilities with the external opportunities and threats in order to formulate its strategies to achieve goals and maintain its values. Construction companies (A and B) should realise that results cannot be gained overnight and that an organisation needs time to adapt, change, and learn. The biggest hurdle for the company is to change and develop a culture that will support TQM. Company need to arrange sufficient resources in order to ensure that the quality improvement plans can be implemented; they are useless if they cannot be implemented in practice. Employees from different levels should be involved in making visions, strategies, policies and plans.

This process helps employees think in terms of how their work supports the realisation of the overall visions and various plans. The benefits from the successful management of change (using organisational culture as a key element) and the literature presented in the culture research helped focus the research on the need to be able to identify and measure organisational culture by all models, the framework and reconceptualised framework presented above, and the developed framework of TQM Barriers for the impact of socio-economic influences on the TQM of the Libyan construction industry as seen in figure 37.

7.3 Development of the model TQM Framework

The TQM conceptual framework developed as part of this thesis was used as a tool for assessment in the case study surveys of company A and B. The assessment application was prepared to enable the analysis of barriers to the implementation of TQM and the overall results indicated that the companies were in the early stages of TQM initiatives. The tools was able to reveal areas where there was potential for improvement. Organisations are social entities that have to struggle with conditions, which happen in an environmental of change, but organisations are comprised of individuals and roles tied together by a network of communication. Economic and market changes as well as technological innovation influence an organisation's external environment and may lead to change. Organisations need to be ready to respond to these kinds of external changes. These changes create new opportunities for the companies and create big and difficult barriers for others.

A model based on the findings of the empirical evidence is presented in figure 37 and includes essential top management actions, associated organisational activities and the guidelines for effective implementation in the context of Libyan construction industries. The benefits from the successful management of change (using organisational culture as a key element) and the literature presented in the culture research helped focus the research on the need to be able to identify and measure organisational culture by all models, the framework and reconceptualised framework presented figure 36, and the developed framework of TQM Barriers for the impact of socio-economic influences on the TQM of the Libyan construction industry (A and B) as seen in figure 37).

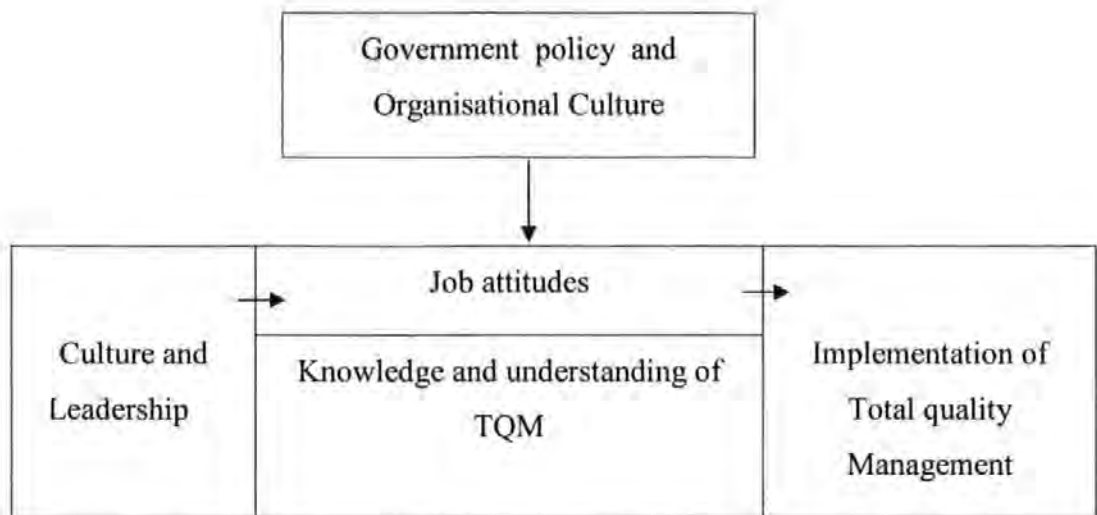


Figure 37 Major Barriers which affect the implementation of TQM in Libya industry

(Source: Author)

The complexity and resource interdependence in realising construction company (A and B) strategies require a well prepared planning. From a critical perspective, all such improvement recipes seek merely to make others more efficient in serving the interests of the dominant management elite. Industry leaders continually call for attitudinal and cultural change whilst advocating management recipes that reinforce the construction industry's dominant culture of command and control. The evaluation of the Libyan construction companies (A and B) with regard to TQM implementation reveals a numbers of weaknesses of their systems. These weak areas can be used as improvement possibilities in formulating the Libyan company's improvement plan as implementation plan (as seen in figure 38).

7.4 Company's improvement plan as implementation plan

These improvement possibilities can be further divided with the continuous changing of the company's internal and external environments. These improvement possibilities can also be changed and Figure 38 displays the dynamic relationships of the four types of improvement possibilities. Managers should show their commitment through their active involvement, visible

commitment, and active leadership and, active encouragement of staff to commit themselves to quality. Two of the key components of leadership commitment are initiative and creativity. Often, a change in company culture is necessary to facilitate the evolving demands of adopting TQM. All available channels of communication must be explored to explain the statement to the employees at all levels of the organisation (see figure 38).

The purpose of figure 38 is to examine possible answers to the questions raised here, and to provide managers with guidelines for the successful implementation of TQM. The highly competitive economic conditions that exist in today's construction industry require that construction companies seek to achieve excellence to remain competitive. This excellence can be achieved with a new style of management that focuses on customer satisfaction, the elimination of waste, continuous improvement, and employee involvement. The objectives of this improvement are to reduce waste, reduce costs, and increase the knowledge of the barriers in TQM. The work at any construction site can be sliced into a series of stages. This chain of events can be identified as a process, improves communications within and among all departments and develops overall company awareness and company unity to encourage decision-making at the most appropriate levels. Implementing total quality management continuous improvement in managing everyday construction activities is relevant to all those who participate in and contribute to the construction process. The implementation of TQM practices not only asks for a deep breath. Therefore, it is essential to analyse the results obtained from the Check stage. The analysis of results operates by considering whether the implementation of the plan effectively improves TQM practices in Libyan construction and by identifying barriers that may be unique to Libya (Tables 73-76).

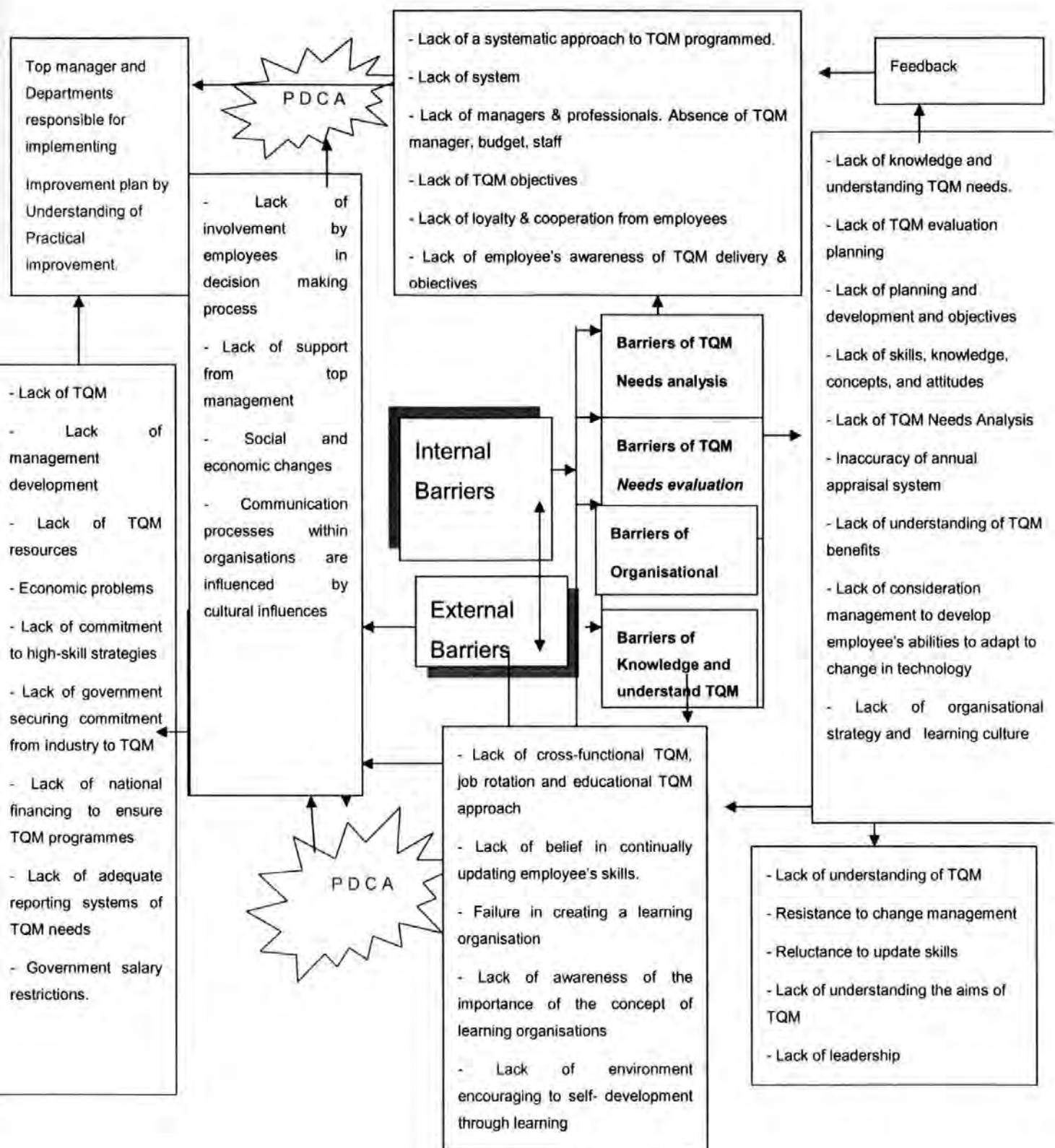


Figure 38 Company's improvement plan as implementation plan

Source: author

Table 73 External/Internal barriers unique to Libya

(Source: Author)

External/internal barriers	Libyan Unique barrier
No governmental support	
Governmental budget restrictions	√
Overstaffed unskilled workforce	
Instability of executive managers	
Movement not by motive them to do work	√
Law of Libyan salaries restriction in public sector	√
The knowledge OFTQM	
Lack of time	
Libyan TQM responsibility policy	√
Lack of importance of TQM' awareness from Libyan governmental departments	
Unavailability of qualified consultancy agencies working TQM implementation in Libya	√
High cost of training	
Unavailability of local or foreign benchmarking agencies in the country	√
Too many suppliers	
Shortage of lecturers and consultants with a real understanding of the fundamentals of TQM	√
close communications about financial presentation in the companies	√

Table 74 Organisational barriers unique to Libya

(Source: Author)

Organisational barriers	Libyan Unique barrier
Lack of top management commitment	
Unavailability of financial resources	
Lack of sufficient technology	
Management Etiquette	√
Lack of professional and qualified people in TQM	
nepotism (no mutual trust between department)	√
Lack of leadership	
Lack of employee involvement and empowerment	
Lack of incentives and reward system	
Lack of coordination between different departments	
Lack of TQM awareness levels	
Lack of understanding of TQM purposes	
Lack of understanding of TQM benefits	
Workforce turnover	
Quality policy and objectives not communicated very well	
inherent opposition to other managers perspectives	√
Lack of Employee Participation	
Traditional managerial approach is prevalent	
No proper quality system and procedures	

Employees avoid taking responsibilities	
Obsession of managers to get visits And hospitality.	√
unfamiliar with the Libyan labour in construction management	√

Table 75 Cultural barriers unique to Libya

(Source: Author)

Cultural barriers	Libyan Unique barrier
Lack of culture	
Basis of the top management position	
Some bad rumours inside and outside effect work. (Socio-cultural)	√
Employees and middle managers express their dissatisfaction by delaying or neglecting to do something.	√
Lack of Morale	
Presence of family and friend relationships in the country. (nepotism)	√
Loyalty to general managers for promotion of management position	
High employee absenteeism	
Family's historical relationship with the government.	√
Employees do not work for the company's future	
Lack of equality of punishments and rewards.	√
Libyan society does not obey the law	√

Table 76 Technical/Non-technical barriers unique to Libya

(Source: Author)

Technical/non-Technical Barriers	Libyan Unique barrier
Lack of continuous training programs	
company sets unreasonable objectives	√
No clear relationship between training investment and the achievement of strategic objectives	
Lack of information related to TQM and quality in general	
Difficulty of corrective and preventive actions	
Difficulty of interpreting requirements	
Deficiency in statistical techniques	
Lack of understanding of each other's prospective	√
Lack of supplier involvement in improvement	
Lack of effective communication	
Lack of effective communicating quality policy and objectives	
Lack of management to share vision and mission	
Lack of Empowerment	
Lack of required documentation system and controlling of documents	
Lack of leadership	
Management of change	
Lack of commitment to satisfy customers	
Lack of Statistical techniques	
Lack of Process control	

The originality of this research is the first empirical study to identify, analyse and go into a deep understanding of the barriers affecting the implementation of TQM in construction management in Libya case study (A&B) Moreover a four stage comprehensive comparative analysis process showed that the TQM model or framework was more logical in sequencing the barriers, elements and comprehensive.

7.5 Summary

In summary, this study addressed a noticeable gap in the research on TQM by investigating effects on two of its most widely held principles, knowledge, teamwork and continuous improvement. In addition, it sought to focus attention on the antecedents of TQM, which has been rather limited, and often restricted to the role of organisational level barriers. The findings support the importance of organisational antecedents (i.e., supervisory reinforcement of TQM and top management support), especially with respect to teamwork. However, the significance of organisational barriers may be over inflated as our findings suggest that individual-level barriers studied here were relatively better predictors of TQM programme. Consequently, we suggest that understanding how individuals respond to TQM and other change initiatives would be enhanced through a more balanced perspective that considers both organisational and individual antecedents. The results of the analysis and dissection highlighted requirements for higher learning and training for Current and future Libyan construction managers in the most important areas of construction management. The result also indicated that there was a positive relationship between organisational culture and employees' as well as identification with the organisation, to evolve better TQM practices, and the developed framework of TQM Barriers for the impact of socio-economic influences on the TQM of the Libyan construction industry (A&B) The result also found the implementation of the improvement plan in Libyan construction industry (A&B). In particular, the critique within this chapter found implications for Libya and its unique environment.

Chapter 8 – Conclusion

8.0 Introduction

In this chapter, the researcher will clarify the main contribution of this work to established theory in relation to TQM as applied in Libya, building on the detailed case study of two Libyan construction companies (A&B). The researcher will review how with the main points were carried out in the whole work after discussion of how the research aims and objectives were met by revisiting of research questions. This chapter will also critiques the methods used within this research, their success, failures and appropriateness as limitations to this type of study and finally present recommendations for future work. The research findings highlighted that some reasons, benefits and barriers of the TQM in Libyan construction industry A&B are similar to other studies' findings across the world e.g. Top management leadership, customer focus, employee involvement, empowerment and teamwork, training, quality systems, and top management commitment are all key barriers to implementation of TQM, but some are unique barriers to Libya.

8.1 Contribution and significance of the research

This research was the first attempt to identify barriers inhibiting the TQM implementation in Libyan construction industry. The reviewed literature highlighted that no work has been done in this field in Libya construction industry (A&B). It should be noted that there is a lack of empirical research on barriers affecting the TQM implementation in Libya specifically, and other countries over the world, in general. The number of studies is very limited with respect to the available literature review. Therefore, this research makes a contribution to this area by adding to the limited work that does exist in publications. The Contribution of the research is in different areas to those envisaged at the outset of this research. At the outset, the novelty of applying this research within the Libyan construction management (TQM and culture) may have been enough to present a major contribution. The fact is that, within

Libya, the adoption and use of quality tools and techniques (for example ISO 9000) within the last few years has been significant. Hence in developing and testing the model and questionnaire use used for this research the aim was to assess how well established was the recognition of the importance of organisational culture to the TQM implementation philosophies within Libya.

The research provides a contribution to knowledge as it will be the first assess the feasibility of introducing the concepts and principles of TQM to a Libyan organisation. The importance of this research lies in the fact that it concerns itself with both the academic and practical aspects of the TQM role on construction sites. Here, a solid background in academic research provides a real, practical model that can be used within the construction industry as following:

- It creates a model to assess TQM
- Enable the adoption of TQM by improving human resource management at all levels
- Assist Libyan construction companies assess the TQM skills and abilities within their own organisations
- Assess the extent of existing TQM principles and recognize weak points so as to prioritize them when preparing training plans.

From the results of testing the TQM implementation model the discussions have provided many contributions that this research has made to enhance existing knowledge. This research is the first empirical study that specifically identified and analysis the barriers affecting TQM implementation in Libyan construction industry.

From the case study, both companies A&B have been slow to understand the importance and potential benefits of TQM due to a lack of awareness and initiatives Nationally. The study found that knowledge of TQM in Libya was considered to be very limited but this research has also highlighted that the awareness of the TQM is rising as the companies surveyed were becoming aware of the potential benefits from developing an effective TQM approach.

Most of the problems stopping the implementation of an effective TQM approach are related to a lack of understanding the principles of TQM by key personnel in the surveyed organisations.

From the case study, it was clear from in companies A&B that they needed to give much greater attention to team work and prepare all employees to work in teams. The majority of respondent rated this concept as most significant or significant emphasising how it is seen as a critical barrier to TQM implementation. All levels agreed that everyone throughout the organisation must work together to improve processes with a better focus on customers (internal and external). This result has been incorporated into the model developed from the research to emphasise that the overall aim for any company must be to focus on satisfying both the Internal and External Customers (IEC).

The aim of this research was "to identify and analyse the barriers that affect the implementation of a TQM in Libyan construction industry" and another key finding from the research in relation to this aim was that managers in both companies surveyed (A&B) failed to understand the concept and philosophy behind TQM. In this respect, the research revealed that the importance of training programs related to TQM at all levels. In order to provide a framework of people in the ownership solution of ongoing organisation problems, the human resource department should be responsible to set up and drive employee problem-solving teams. On the other hand, the lack of knowledge by some team members created tensions within such teams. Attendance at team activities was also time consuming and resulted in additional work pressure for team members, and is where lack of training can present barriers to the successful implementation of change. The cause of tensions can often be traced back to difficulties in the organisation, in its structure and its culture all of which can only be successfully addressed through training.

The survey also revealed that successful change efforts within the companies surveyed (A&B) need to overcome not just personal but also organisational barriers, which contribute to resistance change. There was a poor levels of recognition that the right conditions for change need to be created and this

involves; making people aware of the pressures for change, giving regular feedback on the performance of individual. The literature is consistent in highlighting that changing the culture of an organisation requires changing the basic, assumptions, values and norms held in common by all the members of the organisation. In Companies A&B these deep structures seemed highly resistant to change, the companies were not engaged in sharing best practice and problem solving, developing new skills and there was a need for top and middle managers listen to staff and act on key issues raised by them.

The study revealed financial problems with regard to the investment needed to create a TQM culture. The study revealed a need for changes in the management system, the levels of bureaucracy, managerial efficiency and corruption where the direct cause of the lag of the Libyan industrial sector in implementing TQM may be found. A TQM system does not only require technical changes, but also social changes within the companies or organisation and was a focus for the survey of company A&B. The process of social culture change must offer an alternative to the current culture while not creating a void where a new culture has to be established to achieve the vision and goals of TQM. This research has shown there is a need to increase the respect of the supervisor for the employees, increase employees' understanding of the difficulties faced by supervisors, and increase management's respect for employees. Within both companies there was a need to change some employees' negative attitudes to the construction company, reduce conflict stemming from the working environment, help employees better understand the reasons why many problems cannot be solved quickly, and instil in the employee a better understanding of the importance of TQM programme. This social culture of the companies has a major impact on the opportunities of TQM application.

One of the main contributions was development of a conceptual framework for the barriers affecting the implementation TQM in construction management on public sector organisations. After research discussions have been carried out by the researcher, this thesis has categorised the barriers that affected the two

case studies (A&B) into four types with many unique barriers; External-internal barriers, Organisational barriers, Organisational cultural barriers and Technical and no-Technical barriers with relation to the best analysis. The barriers listed build the main elements of the framework for the type of barriers that are inhibiting two case studies companies A&B.

The lessons learnt from this research could apply to the other organisations in similar workplace environments but needs to be investigated further. In addition the barriers highlighted in this research will help other Libyan organisations to conduct self-assessment for their TQM culture. This study has focussed on identifying and investigating the barriers that hinder the implementation of TQM in the two case studies (A&B) companies specifically and may be relevant to the public sector organisations in general. By identifying the barriers, Libyan organisations can take them into consideration when starting to implement the TQM successfully from the beginning. It will give them a full idea regarding what kind of barriers are needed to be overcome in order to help the organisation to implement an effective TQM from the beginning. Figure 9 Conceptual framework displays the dynamic relationships of the four types of barriers to improvement possibilities.

8.2 Meeting the aim and objectives of the research

The selection of case study strategy, was identified in chapter three to answer how and why questions. The research was successful in answering these kinds of questions through the interviews conducted with the two case study companies the aim and objectives of this research were met by a case study strategy that posed these types of questions.

The first objective "Carry out a review of current literature on Total quality management (TQM) with particular reference to Libya". This objective was achieved by building a good knowledge, by the researcher, through a comprehensive review of literature of Total Quality Management.

The second objective was to A critical assessment of the literature on TQM to assess whether or not there is explicit model or range of models, contained when the Literature, which provides definitive guide to implementation of TQM This objective was achieved by creating a comprehensive knowledge, by the researcher, through review of a comprehensive literature review and identified the important issues of implementation in the public sector and also utilising literature from other construction sectors.

The third objective was In the light of Libyan cultural considerations. Critically investigate the reasons and the root for such problems. This objective also was achieved by reviewing the literature related to the common barriers affecting Total quality management in different countries across. The researcher summarised these barriers in the sector.

The forth objective was to identify the main quality barriers that exist in this sector, and, produce a "best practice guide" aimed at improving Total Quality management (TQM) and practices in the construction industry with unique TQM implementation framework.

This research has been a successful empirical study in identifying and investigating many barriers that impede the TQM implementation in two case study companies (A&B) in Libya and has contributed to the knowledge by producing two detailed Libyan case studies. Some of those barriers identified in the case studies are unique in this research. They are not reported in any previous studies in the literature review. The others are unique to the Libyan situation, being related to the Libyan legislations and culture.

The aim of this research, as in chapter one, was "to identify and analyse the barriers that affect the implementation of TQM quality management system in Libyan construction industry (public sector)". This was verified from the success of this research in identifying and investigating the barriers in the two case studies. Also, it was achieved through the achievement of four objectives of this research, which were developed to support the aim. Some of those barriers are

unique barriers in this research as they have not been reported in the literature and the others may be similar to Arabic, Western and other countries' findings.

This study provides information about the TQM and barriers to implementation and its relationship with organisational culture in Libyan construction industry case study company (A&B). It could be concluded that the requirements of TQM have made a particular impact in Libyan construction industry companies A&B. The process of conducting the survey for this research helped to improve understanding of Total quality management (TQM) in both companies A&B.

8.3 Limitation of the research

This study considers the Libyan construction company of medium and large-scale construction projects. It has been decided to focus on those who have located in Tripoli, the capital city, because most construction projects and (about 58% of the total) are situated in Tripoli (East-West Debt (2005). Although the resultant model is designed to be used within Libya, minor modification will allow for use outside the country as discussed.

Most of the studies found in the literature review related to TQM studied the general implementation issues where most of them are from western countries and related to TQM. There is a shortage in empirical studies that were carried out specifically to understand in-depth the barriers affecting the implementation of the TQM in literature specifically in Libya .

The study was carried out in three connected stages where a case study strategy was chosen, as the philosophy of this research was phenomenological (the main). Firstly, an intensive literature reviews to understand the different issues of TQM and to develop the conceptual framework of this research. Secondly, an empirical study in two case study companies to identify current different types of barriers inhibited the TQM implementation.

A questionnaire was submitted to the managers (Top management and middle management, first line managers and employee) in the two case studies. The submitting of the questionnaire before the conducting of semi-structured

interviews was to gain indications about the types of barriers faced by the organisations regarding the fifty nine statements of barriers that have been derived, by the researcher, from the literature. Also, to inform interview questions. The researcher developed the questions of the interviews to cover all barriers that they mentioned. From the respondents' responses, the researcher did a comparative analysis on the managers (Top management and middle management, first line managers and employee) responses. Then a debate on agreement or disagreement of responses was created. The comparison of those responses (whether the responses are similar or different) That stage was followed by conducting semi-structured interviews with four levels of management in those organisations for an in-depth understanding of different barriers affecting TQM implementation. To get in-depth information and to collect the needed data, the researcher made the interviewee more comfortable and relaxed before conducting every interview by introduced himself as a PhD student at Plymouth University and explained the purpose of the research.

To satisfy the requirements for the research's validity and to enhance generalisability and reliability, the researcher used multiple sources of evidence when collecting data From the four management levels, the researcher gained in-depth understanding and built a deep view to the types of barriers in the two case studies, and the construct validity has been provided by them. The content validity of interviews and questionnaire questions was achieved through review that was carried out by the researcher's supervisor firstly, then submitted the questionnaire to a Arabic version of those questions were submitted to four postgraduate Arabic students and doctors in Libyan University for revising and strengthening the Arabic translation and finally from the outcomes of that pilot study, the researcher revised the questions before conducting interviews in the real case studies. A discussion for the data collected was carried out to investigate the respondents' responses and their implications to define and understand in-depth the barriers faced by the two case studies and linked them with the literature. The findings of this research defined that there is a similarity

in some barriers that affected the two case studies A&B especially external and some organisational and cultural barriers.

8.4 Recommendation and future research needs

The researcher suggestion some recommendations in Libya are:

- Researching more fully the training needs across the Construction sector in Libya is a huge area of study. Further research could be carried out only concentrating on training needs analysis. Areas such as required knowledge, skills and attitudes could be investigated into more detail in construction management in Libya.
- More practical rather than rhetorical support for skills development and real training, and more active involvement in public education and training ventures.
- More effective employee involvement practices including the important aspect of participation in the distribution of economic rewards.
- A greater recognition of the saliency of the whole lives of employees (including health and domestic issues) for work performances and for greater sensitivity over employability, outplacement and redundancy Issues.
- The re-design of reward systems to match the recognition of the importance of awareness of the customer, productivity, innovation and creativity for success.
- As far as participation and communication are concerned, organisations should be very supportive of communicating information to employees and of giving direct access to employee of such information through the various communication channels adopted.
- The organisations' understanding of TQM should clearly include emphasis on policies concerned with greater concentration on

empowerment, flexibility, equal opportunities, and objective-related measures of performance and remuneration schemes.

- The top management members have to listen to the employees and communicate the information in the organisation.

The training must be to all levels of the company as:

Top management

The training must include the tools and methods to create an environment where quality can succeed e.g. training are meeting internal and external customer demands.

Middle management

The training should be ensuring that they are aware and worried to achieve the benefits of TQM, e.g., technical skills and the teamwork for process control.

First- line managers

The training must be in the principles of TQM and Knowledge to be a ware of role system.

Employees

Commitment to quality and awareness must understand to this levels and focus to train them to the positive change.

Finally, for Future research needs

- Develop a survey, to learn more about current situation and barriers in quality and develop a "tool" which could be used by a construction company to assist with the development and implementation of an integrated quality system.
- The potential for cultural change through quality customer service and staff involvement through TQM teams to represent an ephemeral management.

References and Bibliography

- Abdul-Khaliq, A. Harmina, M. and Emam, S. (1982) The relationship between attitudes mental illness and psychology female students. In *Personality and Behavior Research*, pp.131-146, Cairo: Dar Al-Maaref.
- Adair, J. (1983) *Effective Leadership, A self Development Manual*, Gower Publishing Company Limited, Aldershot, British Library Cataloguing.
- Adam F. and Healy M. (2000) *A Practical Guide to Postgraduate Research in Business Area*, Black Hall Publishing.
- Agapiou, A. Price, A. and McCaffer, R. (1995) Planning future construction skill requirements: understanding labour resource issues, *Construction Management and Economics* Vol.13, pp.149-161.
- Agnaia, A. (1990) The scientific techniques of management training in Libyan oil companies, MBA thesis, Garuonis University, Benghazi.
- Agnaia, A (1996) Assessment of management training needs and selection for training: the case of Libyan companies, *International Journal of Manpower*, Vol. 7 No.3, pp.31-52.
- Ahire, S.L. Golhar, D.Y. and Waller, M.A. (1996) Development and validation of TQM implementation constructs, *Decision Sciences*, Vol. 27 No.1, pp.23-56.
- Ahmed, P. K. Loh, Y.E. and Zairi, M. (1999) Cultures for continuous improvement and learning, *Total Quality Management*, Vol. 10, No.4 and 5, pp. 425-432.
- Ahmed, S.M. Kangari, R. (1995) Analysis of client-satisfaction factors in construction industry, *Journal of Management in Engineering*, Vol. 11, No.2, pp.35-41.
- Al-Khader, (1980) *Organisation of Public Sector Agencies in Jordan*, Institute of Public Administration, Amman.
- Al-Khalifa, K.N. and Aspinwall, E.M. (2000) Using the competing values framework to identify the ideal culture profile for TQM: A UK perspective, *International Journal of Manufacturing Technology and Management*, Vol. 2 No.1-7, pp.1025-1038.

- Al-Khalifa, K.N. Aspinwall, E.M. (2000) The Development of Total Quality Management in Qatar, *The TQM Magazine*, Vol. 12, No. 3, 2000, pp 194–204.
- Allison, B. O'Sullivan, T. Owen, A. Rice, J. Rothwell, A. and Saunders, C. (1996) *Research Skills for Students*, Kogan Page, De Montfort University, London.
- Al-Momani, A.H. (2000) Construction delay: A Quantitative Analysis, *International Journal of Project Management*, Vol. 18, pp. 51-59.
- Al-Zamany, Y. Hoddell, S.E.J. and Savage, B.M. (2002) Understanding the difficulties of implementing quality management in Yemen, *The TQM Magazine*, Vol. 14, No. 4, pp. 240-247.
- Al-Zawie, M. (1991) Manpower planning, *Tripoli*, Vol. 1, November, paper presented to the conference organized by the Management Development Centre on planning for training, pp. 1-9
- Alpert, F. Wilson, B. and Elliott, M. (1993) Price signalling does it ever work?, *Journal of consumer marketing*, Vol. 10, No. 4, pp. 6-13.
- Amar, K. and Zain, M.Z. (2002) Barriers to implementing TQM in Indonesian manufacturing organisation, *The TQM Magazine*, Vol. 14, No. 6, pp. 367-372.
- Amaratunga, A. Morin, P. J. Kosik, K. S. and Fine, R. E. (2002) Quantitative and qualitative research in the built environment: application of mixed research approach, *Vol. 51, No. 1*, pp. 17- 31.
- Anderson, E. Sullivan, M.W. (1993) The antecedents and consequences of customer satisfaction for firms, *Marketing Science*, Vol. 12, No. 2, pp. 38-43.
- Anderson, J.C. Rungtusanatham, M. and Schroeder, R.G. (1994a) A Theory of quality management underlying the Deming management method, *Academy of Management Review*, Vol. 19, No. 3, pp. 470-507.
- Appelbaum, S.H. (1991) The Strategic Management Model, *The International Journal of Public Sector Management*, UK, Vol. 4, No. 1, pp. 15-29.
- Arden, A. (1996) *The housing grants, construction and regeneration*, London: Sweet and Maxwell Publishers.

Arnold, K.L. (1994) *The Manager's Guide to ISO9000*, The Free Press, Macmillan, New York, NY.

Atkinson, P. E. (1990) *Creating culture change: The key to successful total-quality management*, Bedford: IFS Publications.

Awan, H.M. and Bhatti, M.I. (2003) An evaluation of ISO 9000 registration practices: a case study of sports goods industry, *Journal of Managerial finance*, Vol.29, Issue.7, pp:109-134.

Balzarova, M. Sharp, J. Castka, P. (2003) Systems based ISO 14001:1996 implementation – beyond the conformity paradigm and towards company wide acceptance, in Ho, S. (Eds) *Proceedings of 8th International Conference on ISO 9000 and TQM*, Montreal, ISBN 962-86107-7-5, Montreal, Canada, April 2003 April, pp.88-93.

Balzarova, M. Bamber, C. and McCambridge S. (2004) The factors affecting successful implementation of Process-Based Management in a UK Housing Association Enterprise, 2nd International Conference on Systems Thinking in Management, School of Management, Salford University. *Business Process Management Journal*, Vol. 10 No.4, pp.387-98

Bartlett, C.A. and Goshal, S. (1992) What is a global manager?, *Harvard Business Review*, September-October, pp.124-132.

Barrett, P. (2000) Systems and relationships for construction quality, *International Journal of Quality and Reliability Management*, Vol. 17, pp. 376-390.

Barton, L.D. (1995) *Wellsprings of Innovation*, Boston, MA: Harvard Business School Press.

Battikha, M.G. Russell, A.D. (1998) Construction quality management – present and future, *Canadian Journal of Civil Engineering*, Vol. 25, No.3, pp.401-11.

Beattie, K.R. Sohal, A. (1999) Implementing ISO 9000: A study of its benefits among Australian organisations, *Total Quality Management*, Vol. 10, No.1, pp.95-106.

Beckhard, R. (1989) *Organisation Development*, California: Addison Wesley.

- Beer, M. (1997) The transformation of the human resource function: resolving the tension between a traditional administrative and a new strategic role, *Human Resource Management*, Vol. 36, No.1, pp.49-56.
- Bell, J. (1993) *Doing your research: A Guide for First Time Researchers in Education*, Milton Keynes, OU Press.
- Bell, J. (2005) *Doing Your Research Project: A Guide for First-Time Researchers in Education and Social Science*, 4th edition, Buckingham: Open University Press.
- Bennett, J. (1991) *International Construction Project Management General Theory and Practice*, Butterworth Heinemann, Oxford.
- Berry, T. (1990) *Managing the Total Quality Transformation*, New York: McGraw-Hill.
- Besterfield, H. D. Besterfield-Michna, C. Besterfield, H. G. and Besterfield-Sacre, M. (1999) *Total quality management (2nd ed.)* London: Prentice hall.
- Biazzo, S. and Bernardi, G. (2003) Process management practices and quality systems standards: Risks and opportunities of the new ISO 9001 certification, *Business Process Management Journal*, Vol. 9, No. 2, pp 150-160.
- Biggar, J. L. (1990) Total quality management in construction. *Trans. Am. Assn. Cost Eng.*, August, Vol.14 No. 1, pp 1-4.
- Biyson, J.M. (1995) *Strategic Planning for Public and Nonprofit Organizations*, Revised edition, US: Jossey-Bass.
- Black, S.A. and Porter, L.J. (1996) Identification of the critical barriers of TQM, *Decision Sciences*, Vol. 27 No. 1, pp. 1-15.
- Blank, G. (2004) Teaching qualitative data analysis to graduate students, *Social Science Computer Review*, Vol.22, pp.188-197.
- Bluedorn, A.C. Kalliath, T.J. Strube, M.J. and Martin, G.D. (1999) The development of an instrument to measure a fundamental dimension of organisational culture, *Journal of Managerial Psychology*, Vol.14, pp. 205-208.
- Bonny, J.B. and Frein, J.P. (1980) *Handbook of Construction Management and Organisation*, 2nd Edition, New York: Van Nostrand Reinhold Co.

- Bowman, C. and Asch, D. (1993) *Strategic Management*, Hong Kong: Macmillan.
- Boyett, J.H. Kearney, A.T. and Conn, H.P. (1992) What's wrong with Total Quality Management, *Tapping the Network Journal*, Vol. 3 No. 1, pp. 10-14.
- Bozeman, B. and Straussman, J.D. (1990) *Public Management Strategies - Guidelines for Managerial Effectiveness*, San Francisco: Josy-Bass Publishers.
- Brake, T. Walker, D. and Walker, T. (1995) *Doing Business Internationally, The Guide to Cross-cultural Success*, Richard D. Irwin, New York,
- Bramley, P. (1996) *Evaluating Training Effectiveness*, Cambridge: University Press.
- Brannick, M. T. (1997) Review of the PDI employment inventory. *Security Journal*, Vol.8, pp.137-139.
- Bratton, J. and Gold, J. (1999) *Human Resource Management: Theory and Practice*, 2nd ed., London: Macmillan Press Ltd.
- Bresnen, M. and Marshall, N. (2000) Partnering in construction: a critical review of issues, problems and dilemmas. *Construction Management and Economics*, Vol.18, pp. 229-237.
- Brown, M.B. & Forsythe, A.B. (1974). The ANOVA and multiple comparisons for data with heterogenous variances. *Biometrics*, vol 30, pp.719-724.
- Brown, M. L. (1995) *A theory of information technology cultures: Magic dragons, wizards, and archetypal patterns*, Unpublished doctoral dissertation, York University, Toronto, Canada.
- Brown A. Wiele, T. and Loughton K. (1998) Smaller enterprises' experiences with ISO 9000, *International Journal of Quality and Reliability Management*, Vol.15, No.3, pp.273-285.
- Brown, M.G. (1993) Why does total quality fail in two out of three tries?, *Journal of Quality and Participation*, Vol. 16, pp. 80-89.
- Brown, M.G. Hitchcock, D.E. and Willard, M.L. (1994) *Why TQM Fails and What to Do About It*, Irwin, Illinois: Burr Ridge.

- Bryman A. (1998) Research Methods and organisation studies, 3rd edition, Routledge, London: Burr Ridge.
- Bryson, J.M. (1995) Strategic Planning for Public and Nonprofit Organisations, Revised Edition, US: Jossey- Bass.
- Burati, J. L. et al. (1992) Quality management organisations and techniques. Journal of Construction Engineering and Management, Vol. 118, pp.113-129.
- Burati, J.L. and Oswald, T.H. (1993) Implementing total quality management in Engineering and construction. J. Manage. Eng., Vol. 9, No.4, pp. 455–479.
- Burke, R. (2003) Project management, planning and control Techniques, 4 ed. British Library Cataloguing in publication Data. John Wiley and Sons Ltd.
- Burke, R. (2007) Introduction to Project management, one small step for the project manager. Burke publication Data. Everbest, Hk / China.
- Byars, L.L. (1992) Concepts of Strategic Management - Formulation and Implementation, 3rd ed., New York: Harper Collins Publisher.
- Cameron, K. S. & Quinn, R. E. (1999) Diagnosing and changing organizational culture: Based on the competing values framework, Reading, MA: Addison-Wesley.
- Cauffield, I. and Schultz, J. (1989) Planning for Change - Strategic Planning in Local Government, UK: Longman Group UK Ltd.
- Chase, G. W. (1993) Effective total quality management process. Journal of Management Engineering, Vol.9, No.4, pp 433–443.
- Checkland, P. (1981) Systems thinking, systems practice. Chichester: Wiley
- Cherrington, D.J. (1995) The Management of Human Resources, 4th edition, New Jersey: Prentice- Hall.
- Child, J. (1984) Organisation - A Guide to Problems and Practice, 2nd ed. London: Harper and Row Ltd.

Chin K. Poon G. and Pun K. (2000) The critical maintenance issues of the ISO 9000 system: Hong Kong manufacturing industries perspective, *Work Study*, Vol.49, No.3, pp.89-96.

Chung, C.H. (1999) It is the process: a philosophical foundation for quality management, *Total Quality Management* Vol. 10, No2, pp.187-97.

CIA Report (2004) Report on Libya, Available at:

<http://.cia.gov/cia/publications/factbook/geos/ly>. (Accessed 11th May 2006)

CIA World Factbook (2004) Report on Libya, Available at:

<http://.cia.gov/cia/publications/ly.html> (Accessed 3rd July 2006)

Clark, T. (1990) International marketing and national character: A review and proposal for an integrative theory, *Journal of Marketing*, Vol.54, pp. 66-79.

Claver E. Gasco J. Liopis J. and Lopez E. (2000) Analysis of a cultural change in a Spanish telecommunications firms, *Business Process Management Journal*, Vol.6, No.4, pp.342-358.

Claver E. Gascó J. Llopis J. González R. (2001) The strategic process of a cultural change to implement total quality management: A case study, Vol. 12, No. 4, pp.469-481.

Clifford, J. and Valentine, G. (2003) *Key methods in Geography*, London: Sage.

Clough, Nutbrown C (2002) *A Student's Guide to Methodology*, London: Sage Publication.

Cocheu, T. (1995) Building a leadership foundation through improvement, *Quality Progress*, Vol.28, No, 4 pp. 41-44.

Cole, G. A. (1995) *Organisational Behaviour: Theory and Practice*. Aylesbury: BPCC.

Collins, L. (1998) The positioning of BPR and TQM in long-term organisational change strategies, *The TQM Magazine*, Vol. 10, No.6, pp. 440-450.

Costin, H. (1994) *Readings in Total Quality Management*, The Dryden Press: Harcourt Brace College Publisher.

- Cotton, J. L. (1993) *Employee Involvement: Methods or Improving Performance and Work Attitudes*, California: SAGE Publications.
- Court, G. and Moralee, J. (1995) *Balancing the building team: gender issues in the building professions*, The Institute for Employment Studies, Report 284.
- Creswell, J. W. (1994) *Research design: Qualitative and quantitative approaches*, Thousand Oaks, CA., USA: Sage Publications.
- Creswell, J. W. (1998) *Qualitative Inquiry and Research Design: Choosing Among Five Traditions*, Thousand Oaks, CA: Sage.
- Creswell, J.W. (2003) *Research Design: Qualitative, Quantitative and Mixed Method Approaches*, 2nd ed., London: Sage.
- Crosby, P.B. (1979) *Quality Is Free*, McGraw-Hill, New York, NY.
- Crosby, P. (1992) *Quality Is Free*, McGraw-Hill, New York, NY.
- Crosby, P. B. (1996) *Quality is still free: Making quality certain in uncertain times*, New York: McGraw-Hill.
- Curry, A and Kadasah, N. (2002) *Focusing on key elements of TQM-evaluation for sustainability*, The TQM Magazine, vol. 14, No.4, pp. 207-216.
- Daft, R.L. (1997) *Organisation theory and design*, 2nd ed., Cincinnati, Ohio: Southwest College Publishers.
- Dale B. (1994) *Managing quality*, 2nd ed., Hemel Hempstead, Prentice Hall International.
- Dale, B.G. and Copper, C.L. (1994) *Total quality management: some common mistakes made by senior management*, Quality World, March, pp. 4-11.
- Dale, B.G. and Plunkett, J.J. (1990) *Managing Quality*, Philip Allan, New York.
- Dale, B.G. Cooper, C.L. Wilkinson, A. (1997) *Managing Quality and Human Resources: A Guide to Continuous Improvement*, Blackwell, Oxford.
- Dale, B.G. (1999) *Managing Quality*, 3rd edition, Blackwell Publisher Inc., Oxford, UK.
- Dale, B.G. (2003) *Managing Quality*, 3rd ed., Blackwell Publishing, Oxford.

- Danowitz, A. Nassef, Y. and Goodman, S. (1995) Cyberspace across the Sahara: computing in North Africa, *Communications of the ACM*, Vol. 38 No. 12, pp. 23-28.
- David, A. and Murat, G. (1997) Total quality management in the Construction process, *International Journal of Project Management*, Vol. 15, No. 4, pp. 234-242.
- Deming Prize (1996) Guide for Overseas Companies, Union of Japanese Scientists and Engineers, Tokyo, Japan.
- Deming, W.E. (1986) *Out of the Crisis*, Cambridge: Massachusetts Institute of Technology.
- Deming, W.E. (1993) *The New Economics for Industry, Government, Education*. Massachusetts Institute of Technology, Center for Advanced Engineering Study, Cambridge,
- DETR. (2000) The state of the construction industry report. Department of Environment Transport and the Regions. Defra, Nobel House, UK. ISBN 0-11-753544-3. available at: <http://www.defra.gov.uk> (Accessed 13th May 2007)
- Dickenson, R. Campbell, D. and Azarov, V. (2000) Quality management implementation in Russia: Strategies for change, *International Journal of Quality and Reliability Management*, Vol.17, No.1, pp.66-81.
- Dobbs-Higginson, M.S. (1993) *Asia Pacific: Its Role in the New World Disorder*, Mandarin, London.
- Dopson, S. Risk, A. and Stewart, R. (1992) The changing role of the middle manager in the United Kingdom, *International Studies of Management and Organisation*, Vol.22, No.1, pp.43-50.
- Does, R. Schippers, W. and Trip, A. (1997) A framework for implementation of statistical process control, *International Journal of Quality Science*, Vol.2, No.3, pp.181-199.
- Dose, J.J. (1997) Work values: An integrative framework and illustrative application to organisational socialisation, *Journal of Occupational and Organisational Psychology*, Vol. 70 pp.219-240.

Dory, J. and Schier, L. (2002) Perspectives on the American quality movement, *Business Process Management Journal*, Vol. 8, Issue. 2, pp. 117-139.

Drensek, R. A. Grubb, F. B. (1995) Quality quest: one company's successful attempt at implementing TQM, *Quality Progress*, Vol. 28, No. 9, pp. 91-95.

Drucker, P. F. (1988) The Coming of the New Organisation, *Harvard Business Review* Vol. 66, No. 1, pp. 45-53.

DTI. (2002) The state of the construction industry report in Libya. Britain's Department of Trade and Industry available at: <http://www.accessmylibrary.com> (Accessed 15th May 2007)

Dyer, G. (1999) Training human resource champions for the twenty-first century, *Human Resource Management*, Vol. 38, No. 2, pp. 119-124.

Easterby-Smith, M. (1991) *Management Research: An Introduction*, London: Sage Publications.

Easterby-Smith, M. Thorpe, R. & Lowe, A. (1993) *Management Research: An Introduction*, London: Sage Publications.

Easterby-Smith, M. Crossan, M. Nicolini, D. (2000) Organizational learning: debates past, present and future, *Journal of Management Studies*, Vol. 37, No. 6, pp. 784-93

Easterby-Smith, M. Thorpe, R. Lowe, A. (2002) *Management Research: An Introduction*, 2nd ed., London: Sage.

East-West Debt (2004) First step towards return of US oil companies to Libya, available at: www.eastwest.be/news.html (Accessed 9th April 2006)

East-West Debt (2005) First step towards return of US oil companies to Libya, available at: www.eastwest.be/news.html (Accessed 9th April 2006)

Eccles, R. G. N. Nohria, and Berkley, J. D. (1992) *Beyond the Hype: Rediscovering the Essence of Management*, Boston: Harvard Business School Press.

EFQM, (2000) *The EFQM Business Excellence Model*, The European Foundation for Quality Management, available at: www.efqm.org.

- Egan, M. (1998) Rethinking construction. London: Department of the Environment, Transport and Regions.
- Ejigu, M. and Sherif, M. (1994) Towards a Management Reform Programme in Libya, report of the UNDP/MDP Reconnaissance Mission, December, Tripoli, Libya,.
- Elfatthaly I. (1979) Political Development and Bureaucracy in Libya, 2nd edition, DC Health and company, Toronto, Canada.
- El-Gamal, (2002) The Economics of 21st Century Islamic Jurisprudence, Proceedings of the Fourth Harvard University Forum on Islamic Finance. Cambridge: Center for Middle Eastern Studies Harvard University.
- El-Gamal, M. (1999) Involving Islamic Banks in Central Bank Open Market
- El-Gamal, M. (2000) An Economic Explication of the Prohibition of Riba in Classical
- El-Mahdi, A. (1996) Labor Flows and Remittances in the MENA Region. Background paper for ERF publication, Economic Trends in the MENA Region,
- Ellerker, S. (1998) Continuous Change, Process and Performance Improvement: A Holistic Systems Perspective, PhD. Thesis, Salford University, UK
- Ellerker, M. (1998) Sandwich Placements: Improving the Learning Experience. Education and Training, Vol., 40 No., 6pp 288-295.
- Emory, C.W. and Cooper, D.R. (1991) Business Research Methods, (4th ed) Irwin.
- England, J.W. and Harpaz, I. (1990) How work is defined: national contexts and demographic and organisational role influences, Journal of Organisational Behaviour, Vol. 11, pp.253-66.
- Evans, J.R. Lindsay, W.M. (1999) The Management and Control of Quality, 4th ed., Cincinnati, OH: South-Western College Publishing.
- Evans-Correia, K. (1993) Big four endorse quality standard, Purchasing, Vol. 115, No. 7, pp.97-99.
- Farid, T. and Wahba K. (2004) An empirical research: Project Management Practice in Egyptian Construction Industry. MSM, 6201 BE Maastricht, Netherlands.

- Farley, R. (1971) Planning for Development in Libya, 1st edition, , New York: Prager Publishers.
- Feigenbaum, A.V. (1982) . Total Quality Control, New York: Mcgraw-Hill.
- Feigenbaum, A.V. (1993) Total quality management 3rd ed., New York: McGraw-Hill,
- Ferris, G.R. Rosen, S.D. and Barnum, D.T. (1995) Handbook of Human Resource Management, Cambridge: Massachusetts Blackwell Publishers.
- Fewing, P. (2005) Construction project Management: An integrated approach, Bodmin, Great Britan: MPG Book Ltd.
- Fink, A. (1995) How to ask survey questions. Thousand Oaks, CA: SAGE Publications.
- Flanagan, R. ingram, I. and Marsh, L. (1998) A bridge to the future: Profitable construction for tomorrow's industry and its customers. London: Thomas Telford and reading construction Forum.
- Flood, R.L. (1993) Beyond TQM, John Wily and Sons, New York, NY.
- Flowerdew,R. and Martin, D. (2005) 2nd ed., Methods in Human geography: A guide for students doing a research project, Harlow: Pearson.
- Flyn, B.B. Schroeder, R.G. and Sakakibara,S. (1994) A framework for quality management research and an associated measurement instrument, Journal of Operations Management, Vol. 11, pp. 335-360.
- Flyn, B.B. Schroeder, R.G. and Sakakibara, S. (1995) The impact of quality management practices on performance and competitive advantage, Decision Sciences, Vol. 26, No. 5, pp. 650-688.
- Fox, M. (1995) Quality Assurance Management, 2nd ed., London: Chapman and Hall.
- Fuentes, M. (2002). Spectral methods for nonstationary spatial processes.Biometrika, 89 197-210.
- Fuentes, C.A.M. Benavent, F.B. Moreno, M.A.R. Cruz, T.G. and Del Val, M.P. (2000) Analysis of the implementation of ISO 9000 quality assurance systems, Work Study, Vol. 49 No.10, pp.229-241.

Furrer, O., Liu, B.S. & Sudharshan, D. (2000). The relationships between cultural and service quality perceptions – Basic for cross-cultural market segmentation and resource allocation. *Journal of service research*, Vol, 2 No.4, pp 355-371.

Gale, A.W. (1992) Women into construction: reflections on findings and recommendation of two recent evaluation exercises on experimental insight courses for school students in Britain, *Contributions to the Gender and Science and Technology Conference*, Eindhoven, The Netherlands, Vol. 2, pp.335-44

Gasandoil.com (2002) Country analysis, Libya, available at:
www.gasandoil.com/goc/news/nta23498.htm (Accessed 19 August 2006)

Gelder, J. (1994) The contract documents as a project management tool, in *Proceedings of the National Construction and Management Conference*, Sydney, 17–18 February, pp. 39–56.

Ghobadian, A. and Gallear, D. (1997) TQM and organisation size, *International Journal of Operations and Production Management*, Vol.17, No.2, pp.122-160.

Gilgeous, V. (1997) *Operations and the Management of Change*, Financial Times, Great Britain: Prentice Hall.

Gill, J. and Johnson, P. (1991) *Research Methods*, Paul Chapman, London.

Gill, J. and Johnson, P. (1997) *Research Methods for Managers*, 2nd edition, Sage, London.

Glover, J. (1993) Achieving the organisational change necessary for successful Quality. *International Journal of Quality and reliability Management*, Vol.10, No.6, pp.46-62.

Glover, L. and Siu, N. (2000) The human resource barriers to managing quality in china, *International Journal of Human Resource Management*, October, pp.867-882.

Goetsch, D. Davis, S. (2000) *Quality Management: Introduction to Total Quality Management for Production, Processing, and Services*, Englewood Cliffs, NJ: Prentice Hall.

Goodman, J.A. Bargatze, G.F. and Grimm, C. (1994) The key problems with TQM, *Quality Progress*, January, pp. 45-48.

- Gotzamani, K.D. (2004) A thorough analysis of ISO 9000 contribution to small and medium size enterprises: a comparison with large enterprises, *International Journal of Management Practice*, Vol. 1, pp.40–50.
- Graham, H.T. and Bennet, R. (1992) *Human Resources Management*, 7th ed. The M and E Handbook Series, London: Pitman Publishing.
- Gryna, F. M. 2001, *Quality Planning and Analysis*, Columbus, OH: McGraw Hill.
- Guion and Gibson (1988) personnel selection and placement, *Annual review of fashology* Vol.39, pp.344-374.
- Hackman, J.R. and Wageman, R. (1995) Total quality management: Empirical, conceptual, and practical issues, *Administrative Science Quarterly*, Vol. 40, pp. 309-342.
- Haftari, A. Betts, J. and Tarbaghi, A. (1994) The elements for successful economic development: A Libyan case study, *Proceedings of Arab Management Conference*, University of Bradford Management Centre, 6-8 July, pp. 220-32.
- Hamali, J. and Hides (1999) performance Mesasurement .Unpublished paper
- Hague, J. and Malos, E. (1993) *Domestic Violence: Action for Change*, U.K: New Clarion Press.
- Haigh and Morris (1995) Empowerment: An endeavour to explain an enigma. *Total quality management*, Vol. 7, No.3, pp. 324-331.
- Hall, E.T. (1981a) *Beyond Culture*, Anchor Books, Doubleday, New York.
- Hall, E. T. and Hall, M. R. (1990) *Understanding Cultural Differences*. Yarmouth, ME: Intercultural Press Inc.
- Hall, E.T. (1990) *Understanding Cultural Differences, Germans, French and Americans*, Yarmouth: Intercultural Press
- Harrington, H.J. (1999) *Total Improvement Management*, McGraw-Hill, New York, NY.,
- Harris, L. C. (2002) Sabotaging market-oriented culture change: an explanation of resistance justifications and approaches. *Journal of Marketing Theory and Practice*, Vol.10, No.3, pp.58-70.

Harris, P.R. and Moran, R.T. (1999) *Managing Cultural Difference-Leadership Strategies for a New World of Business*, Gulf Publishing Company, Houston, TX, pp.106-273.

Hart, D.R. (1994) *Quality Handbook for the Architectural, Engineering and Construction Community*, Milwaukee, WI: ASQC Quality Press.

Heath, P. M. (1989) The path to quality achievement through teamwork plus commitment, *International Journal of Quality and Reliability Management*, Vol. 1, No. 2, pp. 51-59.

Hele, J. (2003) *The eight Quality Management Principles a Practical Approach*, ISO Management Systems, Vol. 3, No. 2, ISO Geneva, Switzerland.

Hellard, R.B. (1993) *Total quality in construction projects: Achieving profitability with customer satisfaction*, London: Thomas Telford publishing.

Hellsten, U. Klefsjö, B. (2000) TQM as a management system consisting of values, techniques and tools, *The TQM Magazine*, Vol. 12, No.4, pp.238-244.

Henry E. (2000) Quality management standardization in the French construction industry: singularities and internationalization prospects, *Construction Management and Economics*, Vol. 18, pp. 667-77.

Herbig, P. Palumbo, F. O'Hara, B.S. (1994) Total quality and the human resource professional, *The TQM Magazine*, Vol. 6, No.2. pp.122-150

Hickson, D. J. and Pugh, D. s. (1995) *Management world-wide: The Impact of Societal Culture on Organisations around the World*. London: penguin Books.

Hill, S. and Wilkinson A. (1995) In search of TQM, *Employee Relations*, Vol.17, No.3, pp.8-25.

Ho, K. and Fung, K. (1994) Developing of a TQM excellence Model, *The TQM Magazine*, Vol.6, No.6, pp.24-30.

Ho, S.K. (1995) *TQM: An Integrated Approach. Implementing Total Quality through Japanese 5-S and ISO 9000*, London: Kogan Page.

Hoecklin, L. (1995) Managing Cultural Differences, Addison-Wesley and the Economist Intelligence Unit, Wokingham.

Hofstede, G. (1980) Culture's Consequences: International Differences in Work related Values, Newbury Park, CA: Sage.

Hoevemeyer, A. (1993) How effective is your team?, Training and Development, Vol. 47, No. 9, pp.67-71.

Hofstede G. (1991) Cultures and Organisations: Software of the Mind, London: McGraw- Hill.

Hofstede G. (1991) Cultures and Organisations: Software of the Mind, London: McGraw- Hill.

Hofstede, G. (2002) Dimensions do not exist: a reply to Brendan Mc Sweeney, Human Relations, Vol. 55, No.11, pp.1355 -1365

Hokoma, R.A. Khan, M.K. (2008) Total quality management; Just in time; Manufacturing resource planning; Cements; Libya, Journal of Manufacturing Technology Management, Vol.19, N0.7, pp. 893-907.

Holt, D. B. (1998) Does Cultural Capital Structure American Consumption?, Journal of Consumer Research, Vol.25, pp. 1-22.

Hoyle, D. (1994) Quality systems handbook, 2nd ed., Oxford: Butterworth-Heinemann.

Hoyle D. (2001) TQM: Quality system handbook, 4th edition, Oxford: Butterworth-Heinemann.

The reports of General Peoples Committee for Economy and Commerce. Available at: <http://www.gslibya.com> (Accessed 5 June 2007).

Huczynski, A. and Buchanan, D. (2001) Organisational Behaviour: An Introductory Text, 4th edition, Harlow.

Hung, Y.H. Huang, M.L. & Chen, K.S. (2003) Service quality evaluation by service quality performance matrix. Total Quality Management and Business Excellence, 14(1)pp 78-88.

Hussey, E. (1995) How to Manage Organisational Change, London: Kogan Page.

Hussey, J. Hussey, R. (1997) *Business research-A Practical Guide For Undergraduate and Postgraduate Students*, MacMillan Press Ltd, London, UK.

Hyde, A. (1992) *The Proverbs of Total Quality Management: Recharging the Path to Quality Improvement in the Public Sector*, Public Productivity and Management Review.

Ishikawa, K. (1985) *What is Total Quality Control? The Japanese Way*, , London: Prentice-Hall.

Islamic Jurisprudence, Proceedings of the 3rd Harvard University Forum on Islamic Finance. Cambridge: Center for Middle Eastern Stud Organization and Management in the Public Sector, 2nd. ed., London: Pitman Publishing.

Krygier, A. (1993) TQM A world view, *Journal of Management Development* Vol. 12 No.7, pp.36–39.

Layder, D. (1998) *Sociological Practice: Linking Theory and Social Research*, London: Sage.

Laza, R.W. and Wheaton, P.L. (1990) Recognising the pitfalls of total quality management, *Public Utilities Fortnightly*, 12th April, pp. 17-21.

Lee, J.N. (2001) The impact of knowledge sharing, organisational capability and partnership quality on IS outsourcing success, *Information Management*, Vol. 38, pp. 326-334.

Lee, P.M. Quazi, H.A. (2001) A methodology for developing a self-assessment tool to measure quality performance in organizations, *International Journal of Quality and Reliability Management*, Vol. 18. No.2, pp.118-141.

Lee, S.M. Rho, B.H. and Lee, S.G. (2003) Impact of Malcolm Baldrige national quality award criteria on organisational quality performance, *International Journal of Production Research*, Vol.41, pp. 2004-2019.

Lengnick-Hall, C. Lengnick-Hall, M. (1988) Strategic human resource management: A review of the literature and a proposed typology, *Academy of Management Review*, Vol. 13, No.3, pp.454-470

- Levene, H. (1960) Robust test for equality of variances, *Contributions to Probability and Statistics*, Stanford University Press, Stanford, CA, pp. 278–292.
- Levene, H. (1960) In *Contributions to Probability and Statistics: Essays in honour of Harold.*, Stanford University Press, pp. 278-291.
- Lewis, D.A. (1992) A Comparison of Attitudes of Spanish and American Quality Assurance Managers, *Production and Inventory Management Journal*, Vol. 33 No.1, pp.42-45
- Liang, T. P. (1997) An evaluation of TQM and the techniques for successful implementation, *Training for Quality*, Vol.5, No.4, pp.150-159.
- Libyan Foreign Investment Board (2001) Libya, available at: <http://investinlibya.ly>
- Lincoln, Y.S. (1985). *Organisational theory and inquiry: The paradigm revolution*. Beverly Hills, CA: Sage
- Lipovatz, D. Stenos, F. and Vaka, A. (1999) Implementation of ISO 9000 quality systems in Greek enterprises, *International Journal of Quality and Reliability Management*, Vol.16, No.6, pp.534-551.
- Little, S (2002) *Managing Knowledge: An Essential Reader*, Sage Publications. London: Sage
- Lord, F. M. and Novick, M. R. (1968) *Statistical theories of mental test scores*, Reading, MA: Addison-Wesley Publishing Company.
- Love, P.E.D. Gunasekaran, A. and Li, H. (1998) Improving the competitiveness of manufacturing companies through continuous incremental change, *TQM Magazine*, Vol.10, no.3, pp.181-183.
- Love, P.E.D. and Li, H. (2000) Overcoming the problems associated with quality certification, *Construction Management and Economics*, Vol.18, pp.139–49.
- Low, S.P. (1994), ISO 9000: implementation problems in the construction industry, *Quality World*, April, pp.228-34.
- Low, S.P. Goh, K.H. (1996) The practice of quality and quality assurance in the Singapore construction industry, *Quality Forum*, Vol. 19, No.1, pp.40-45.

Low, S.P. and Winifredo, M.A. (2000) Cross-cultural influences on quality management systems: two case studies *Work Study* Vol. 49, No.4, pp.134 – 145.

Low, S. Ling Pan, H. (2004) Critical linkage factors between management and supervisors staff for ISO 9001:2000 quality management systems in construction, *Proceedings of the 9th International Conference on ISO 9000 and TQM*, 5-7 April 2004, Bangkok.

Ludwig-Baker, (1999) *Analysis and Interpretation In Qualitative Research in Action*, London: Edward Arnold.

Mabey, C. (1993) *Managing Change*, London: Paul Chapman Publishing Ltd.

Macadam, C. (1996) Addressing the barriers of managing change, *Management development Review*, Vol.9, No.3, pp.37-41.

Macedo-Soares, T.D.L.V.A. Lucas, D.C. (1996) Key quality management practices of leading firms in Brazil: findings of a pilot-study, *The TQM Magazine*, Vol. 8 No.4, pp.55-70.

Madu C. (1997) Quality Management in developing economics, *International Journal of Quality Science*, Vol.2, No.4, pp.272-291.

Mahra, s (2001) TQM as a management strategy for the next millennia, *International Journal Operation and Production management*, vol. 21, No 5, pp.6-10.

Maital, S. Maltz, N. (Eds) (1980) *Lagging Productivity Growth: Causes and Remedies*, Ballinger, Cambridge, MA.

Malcolm Baldrige National Quality Award (1999) *Criteria for Performance Excellence*, National Institute of Standards and Technology, United States Department of Commerce, Gaithersburg, MD.

Malhotra, Y. (2003) *Measuring Knowledge Assets of a Nation: Knowledge Systems for Development*. (Invited Keynote Presentation) United Nations Advisory Meeting for the Department of Economic and Social Affairs. 4-5 September 2003. New York: New York City.

Mallak L. Bringelson L. and Lyth D. (1997) A cultural study of ISO 9000 certification, *International Journal of Quality and Reliability Management*, Vol.14, No.4, Pp. 328-348.

- Maloney, W.F. (2002) Construction product/service and customer satisfaction, *Journal of Construction Engineering and Management*, Vol. 128, No. 6, pp. 522-529))
- Mann, R. and Kehoe, D. (1994) An evaluation of the effects of quality improvement activities on business performance, *International Journal of Quality and Reliability Management*, Vol. 11 No. 4, pp. 29-44.
- Mann R. and Kehoe D. (1995) Factors affecting the implementation and success of TQM, *International Journal of Quality and Reliability Management*, Vol.12, No.1, pp.10-24.
- Marshall C. and Rossman G.B. (1989) 'Designing Qualitative Research' SAGE, Newbury Park CA.
- Martinez-Lorente, A. Dewhurst, F. Dale, B. (1998) Total quality management: origins and evolution of the term, *The TQM Magazine*, Vol. 10 No. 6, pp. 376-381.
- Mason J. (2000) *Qualitative Researching*, SAGE Publications Ltd, London, UK.
- Masters, R.J. Overcoming the Barriers to TQM's Success. *Quality Progress* 29, no. 5 (1996): 53–55.
- Mattila, A. S. (1999) The role of culture in the service evaluation process. *Journal of service research*, 1(3) 150-60.
- Matusak, L. (1996) *Finding Your Voice. Learning To Lead Anywhere You Want To Make a Difference*. San Francisco, CA: Jossey-Bass.
- Maull R. Brown P. and Cliffe R. (2001) Organisational culture and quality improvement, *International Journal of Operations and Production Management*, Vol.21, No.3, Pp.302-326.
- McDermott, R. (1999) Why information technology inspired but delivers knowledge management. *California Manage. Rev.*, 41: 105-115
- McDermott R. and O'Dell C. (2001) Overcoming Cultural barriers to sharing knowledge, *Journal of Knowledge Management*, Vol.5, No.1, Pp.76-85
- McNair, Carol Jean. and Leibfried, Kathleen H. J. 1992 *Benchmarking : a tool for continuous improvement*, Harper Business, New York, NY

- Mellon, C.A. (1990) *Naturalistic Inquiry for Library Science: Methods and Applications for Research, Evaluation, and Teaching*, Greenwood, New York, NY.
- Mersha, T (1997) TQM implementation in LDCs: driving and restraining forces, *International Journal of Operations and Production Management*, Vol. 17 No.2.pp45-77)
- Middle East (2004) Libya has the finest bankers in the region but the worst banks, *Business Middle East*.
- Milakovich, M. E. (1990) Total quality management in the public sector. *National Productivity Review*, 10(2) 208-209.
- Montanan, J.R. Morgan, C.P. and Bracker, J.S. (1990) *Strategic Management a Choice Approach*, US: Dryden Press.
- Morgan, C. and Murgatroyd, (1994) *Total quality management in the public sector*. Buckingham, Open University Press.
- Morgan, C. and Murgatroyd, S. (1997) *Total quality management in the public sector*. Buckingham, UK: Open University Press.
- Morris, D.S, Haigh, R.H (1996) Empowerment: an endeavour to explain an enigma, *Total Quality Management*, Vol. 7 pp.323-30
- Morris, T. Wood, S. (1991) Testing the survey method: continuity and change in British industrial relations, *Work Employment and Society*, Vol. 5 No.2, pp.255-80
- Moser S. and Bailey T. (1997) Total quality management in the US Air Force: a study of application and attitudes, *International Journal of Quality and Management*, Vol.14, No.5, pp.482-490.
- Motwani J. Kurnar A. and Chang C. (1996) A roadmap to implementing TQM, *International Journal of Quality and Reliability Management*, Vol.13, No.1, Pp.72-83.
- Muna, F.A. (1980) *The Arab Executive*, Macmillan, London.
- Najmi, M. and Kehoe, D.F. (2000) An integrated framework for post-ISO 9000 quality development. *International Journal of Quality and Reliability Management* 17 33, pp. 226–258.

Nancy, R. and Milligan, D. (2004) Cygnus Mentoring and Professional Development held its first national conference on 'Mentoring in Medicine' at the East Midlands Conference Centre in Nottingham on 20-21. April 2004.

Nankervis, A.R. Compton, R.L. McCarthy, T.E. (1992) Strategic Human Resource Management, Thomas Nelson, Melbourne.

Nesan, L. J. and Holt, G. D. (1998) Empowerment in Construction Organisations: The Way Forward for Performance Improvement. Research Studies Press Ltd, Somerset, UK

Ngai E. and Cheng T. (1997) Identifying potential barriers to total quality management using principle component analysis and correspondence analysis, International Journal of Quality and Reliability Management, Vol.14, No.4, Pp.390-409.

Noe R. Hollenbeck J. Gerhart B. and Wright P. (2003) Human Resource Management, 4th edition, McGraw-Hill.

Nwabueze, U. Kanji, G.K. (1997) The implementation of total quality management in the NHS: how to avoid failure, Total Quality Management, Vol. 8 No.5, pp.265-80.

Oakland, J.S. Beardmore, D. (1995) Best practice customer service, Total Quality Management, Vol. 6 No.2, pp.135-48.

Oakland J. (2000) Total Quality Management: text with cases, 2nd edition, Butterworth Heinemann Ltd, UK.

O'Brien, J. J. (1989) Construction Inspection Handbook, 3rd ed. VNR, New York.

Okumus, F. and Hemmington, N. (1998) Barriers and resistance to change in hotel firms: An investigation at unit levels. International Journal of Contemporary Hospitality Management, 10(7):283.

Operations, Thunderbird International Business Review, 41(4,5) pp. 501-21.

Oppenheim, D (2001) Questionnaire Design: interviewing and Attitude Measurement. London: (UK) LTD.

Pallant, J. (2005) SPSS Survival Manual, 2nd ed., Open University Press, Buckingham.

Pasmore, W.A, and Woodman,R. W. (Eds) Research in Organizational Change and Development (Vol. 12, pp. 97–128) Greenwich, CT: JAI Press.)

Patel A. and Randell G. (1994) Total Quality Management-The solution to more training in Britain?A survey of small-to-medium sized manufacturing firms in the North England, Training for Quality, Vol.2, No.1, Pp.23-28.

Patton, M.Q. (1990) Qualitative Evaluation and Research Method, 2ed. Newbury Park, CA: Sage

Peters (1987) Tom. Thriving on Chaos. New York: Alfred A. Knopf.

Pettigrew, A. and Whipp, R. (1991) Managing Change for Competitive Success, Blackwell Publisher, Oxford.

Porter, M.E. 1985 Competitive Advantage - Creating and Sustaining Superior Performance, the Free Press, New York, NY.

PSDCPIS (2000) Public Service Department's Computerised Personnel Information System, Government of Libya Published for the International Bank for Reconstruction and Development. Available at: <http://..cia.gov/cia/publications/ly.html> (Accessed 3rd July 2007)

Public Service Department's Computerised Personnel Information System, (2000) Published for the International Bank for Reconstruction and Development. Available at: <http://..cia.gov/cia/publications/ly.html> (Accessed 3rd May 2006)

Punch, K.F. (2000) Developing Effective Research Proposals, SAGE Publications,London.

Quazi, H.A. Jemanigin, J. Kit, J.W. Lee (1998) critical factors in quality management and guidelines for self-asseessment: the case of Singapora, Total Quality Management, Vol.9 no.1, pp34-54.

Quazi H. Hong C. and Meng T. (2002) impact of ISO 9000 certification on quality management practices: A comparative study, The TQM Magazine, Vol.13, No.1, Pp.52-56.

Quinlan, J.C (1996) Dodging the potholes, Quality in Manufacturing, International Journal of Quality and Reliability Management Vol, .15, no. 5 pp488-500.

Quinn, J.B (1996) Managing Professional Intellect: Making the most of the Best, Harvard Business Review.

Rad, Ali Mohammad Mosadegh (2006) The impact of organisational culture on the successful implementation of total quality management the TQM Meagazen Volume 18, Number , pp. 606-623.

Ramadan A. (2002) Human Resource Planning and Staffing Practice in Libyan Public Sector Organisations, PhD. Thesis, Liverpool John Moores University, UK.

Olayinka, R. and Smyth, H. (2007) The construction and building research conference of the Royal Institution of Chartered Surveyors, Georgia Tech, Atlanta USA, In association with: College of Architecture Georgia Institute of Technology Atlanta United States of America. Published by: RICS United Kingdom.

Reeves, T. C. (1992) Research foundations for interactive multimedia. In Promaco Conventions (Ed.) Proceedings of the International Interactive Multimedia Symposium, 177-190. Perth, Western Australia, 27-31 January. Promaco Conventions.

Remenyi, D. Williams, B. Money, A. and Swartz, E (1998) Doing Research in Business and Management, Sage Publications, London,

Richardson, T. (1997) Total Quality Management, Delmar Publishers, New York, NY.,

Riley, K. Selden, R. and Caldwell, B. (2004) Big change question: Do current efforts to initiate top-down changes fail to support the moral purpose of education? Journal of Educational Change, 5 (4) 419–422.

Riley, M. Clare-Brown, D. (2001) Comparison of Cultures in Construction and Manufacturing Industries. ASCE Journal of Management in Engineering. Vol. 17 No.3, pp.149-58

Robbins, Stephen P. (1995) Organisational Behavior: Concepts, Controversies, and Applications. Englewood Cliffs, NJ: Prentice-Hall, 518-524.

Robert, M. (1996) Overcoming the barriers to TQM's Success: A road map of potential hazards along the TQM Journey, Quality Progress, Vol.29, No.5, Pp.51-56.

Robson, C. (1993) Real world research: a resource for social scientists and practitioner researchers.

- Robson, S. and Foster, (1993) *Qualitative Research in Action*, Edward Arnold, London.
- Round and Chi, N. Y. (1985) *Total Quality Management for Construction*, ASCE Journal of Construction Engineering and Management,
- Rajendran, and Devadasan, (2005) *Quality audits: their status, prowess and future focus*, managerial auditing journal, Vol.20.No.4.pp363-84.
- Saha, S. Hardie, M. (2005) *Culture of quality and the Australian construction industry*, Proceedings of the 13th Annual Conference of the International Group for Lean Construction, Sydney, pp.531-38.
- Sakilani, J. (1992) *Why the industry companies in Libya do not achieve the predefined quantity of production. The reasons and the solutions*, MBA thesis, Garuonis University, Benghazi, Libya.
- Salazar, R. (1994) *Why TQM fails*, World Executive Digest. Murcia, Spain.
- Samson, D. 1997. *Progress in total quality management: Evidence from Australasia*. International Journal of Quality Science 2 4, pp. 214–230.
- Sanderson L. (1992) *Management of Quality in Local Government*, Longman Group, UK.
- Santos, L. and Escanciano, C. (2002) *Benefits of the ISO 9000 1994 system. Some considerations to reinforce competitive advantage*, International Journal of Quality and Reliability Management, Vol. 19, No 2, pp 321-344
- Saraph, J.V. Benson, P.G. and Schroeder, R.G. (1989) *An instrument for measuring the critical barriers of quality management*. Decision Sciences, 20(4) 810–29
- Saunders, I.W. Preston, A.P. (1994) *A model and a research agenda for total quality management*, Total Quality Management, Vol. 5 No. 4, pp. 185-202
- Saunders, M. Lewis, P. and Thornhill, A. (1997, 2000) *Research Methods for Business Students*. 3rd ed. Harlaw: Pearson Education Limited.
- Saunders, M. Lewis, P. and Thornhill, A. (1997,2000) *Research Methods for Business Students*. 3rd ed. Harlaw: Pearson Education Limited.

- Schein, E. H. (1985) *Organizational culture and leadership: A dynamic view*. San Francisco, CA: Jossey-Bass.
- Schein, E. H. (1991) What is culture? In P. J. Frost, L. F. Moore, M. R. Louis, C. C. Lund-berg, and J. Martin (Eds.) *Reframing organizational culture* (pp. 243-253) Newbury Park, CA: Sage.
- Schmoker, M. Wilson, R.B. (1993) Adapting total quality doesn't mean turning learning into a business, *Educational Leadership*, Vol. 51 No.1, pp.62-3
- Schneider, S.C. Barsoux, J.L. (1997) *Managing Across -cultures*, Prentice Hall, Englewood Cliffs, NJ, .
- Schonberger, R.J. (1994) Human resources management lessons from a decade of total quality management *California Management Review*, Vol. 36 No.4.pp.29-77
- Schuler, R.S and Jackson, S.E (1987) Linking Competitive Strategies with Human Resource Management Practices, *Academy of Management Executive*, Vol, 1, NO.3.pp.122-178
- Schwartz, S.H. (1999) The theory of cultural values and some implications for work, *Applied Psychology: An International Review*, Vol. 48 No.10, pp.23-47.
- Sekaran (2003) *Research Methods for Business: A Skill Building Approach*, 4th Edition, John Willey and Sons, Ltd.
- Sekaran ,U (2000) *research methods for business; Askill-building approach*, 3ed john wiley andsons.INC
- Serpell A. (1999) Integrating quality systems in construction projects: the Chilean case. *International Journal of Project Management*; 17(5):316–321.
- Sharp J. Balzarova M. Castka P. and Bamber C. (2003) Problems and barriers in implementation of process-based quality management systems-UK multiple case study perspective, *Proceedings of 8th International Conference on ISO 9000 and TQM*, Ho, S. (Ed), pp. 133-140.
- Sims, H.P. (1986) *the Thinking Organisation* (San Francisco, CA: Jossey-Bass.

Sinclair, D. and Zairi, M. (2001) "An empirical study of key elements of total quality-based performance measurement systems: a case study approach in service industry", *TQM*, Vol.12, No.4.PP. 530-49.

Singelis, T.M., Triandis, H.C., Bhawuk, D.S., Gelfand, M. (1995), Horizontal and vertical dimensions of individualism and collectivism: a theoretical and measurement refinement, *Cross-Cultural Research*, Vol. 29 pp.240-75.

Sitkin, S.B., Sutcliff, K.M., Schroeder, R.G. (1994).Distinguish control from learning total quality management: a contingency perspective, *Academy of Management Review*, Vol. 19 No.3, pp.537-64

Slack, N. Chambers, S. Harland, C. Harrison, A. and Johnston, R. (1995) Operations Management, PITMAN Publishing, London.

Smith, P. (1993), Outcome-related performance indicators and organisational control in the public sector, *British Journal of Management*, Vol. 4 No.3, pp.135-151.

Smith.R.J Discenza, H.L.R. and Piland, N.F. (1993) Reflections on Total Quality Management and Health Care Supervisors. *Health Care Supervision*, Vol.12, No.2 pp.32-45.

Smith R J. (1993) Workshop in Poetry. For The Writers' Workshop (Asheville, NC) The Summit School, Winston-Salem, NC.

Smith, R.J. (1994) *Strategic Management and Planning in the Public Sector*, Longman, Harlow.

Smith R.J Houston, J. McIntire, S. (1996) Organisation Development, Strategies for Changing Environments, HarperCollins, New York, NY.

Smith, P.B., Noakes, J. (1995) Cultural differences in group processes in West, M.A. (Eds),*Handbook of Work Group Psychology*, Wiley, Chichester.,

Smith P. B., Dugan, S., Trompenaars, F. (1996) National culture and the values of organizational employees: a multi-dimensional analysis across 43 nations, *Journal of Cross- Cultural Psychology*, Vol. 27 pp.231-264.

- Spector, P.E. Cooper, C.L. Sanchez, J.I. O'Driscoll, M. Sparks, K. and colleagues (2002) Locus of control and well-being at work: How generalizable are Western findings? *Academy of Management Journal*, Vol.45, No.2, pp.453-461.
- Spencer, J. and Pruss, A. (1993) *How to Implement Change in Your Company*, Judy Piatkus Publisher, London
- Srinindhi B. (1998) Strategic quality management, *International Journal of Quality Science*, Vol.3, No.1, pp.39-70.
- Starbuck, William H.(1993) Keeping a Butterfly and an Elephant in a House of Cards: The Elements of Exceptional Success, *Journal of Management Studies* Vol.,30:No.,6 : 885-921.
- Stebbing, L. 1993. *Quality Assurance: The Route to Efficiency and Competitiveness*. 3rd ed. Great Britain: Ellis Horwood Ltd.)
- Steve Y. W. Lam, M.ASCE,1 and Conrad H. W. Tang (2002) Role of Surveyors under TQM in the Construction Industry, *Journal of Surveying Engineering*, Vol. 128, No. 4, November 1,pp198-199.
- Stone E. (1978) 'Research Methods in Organisational Behavior' Scott Foresman, Glenview IL.
- Stoner, J.A. Freeman, R.E. (1989) *Management*, 4th ed., Prentice-Hall, Englewood Cliffs, NJ,
- Storey, J. (1992) *Developments in the management of human resources* Blackwell Oxford.
- Strange, P. S. and Vaughan, G. D. (1993) "Total quality management: A view from the playing field." *J. Manage. Eng.*, 9 (4) 390–398.
- Strauss, A., J. Corbin (1990) *Basics of qualitative research: grounded theory procedures and techniques*. London: Sage
- Street, P.A. and Fernie, J.M. (1993) Costs drawbacks and benefits—the customer's view of BS 5750. *Training for Quality*, Vol.,1, pp21–23

- Sun, H. (2000) Total quality management, ISO 9000 certification and performance improvement International Journal of Quality and Reliability Management. Vol. 17, No. 2, pp. 169-177.
- Tarbaghia, T.M. Haftari, A. Betts, J. (1994) The elements for successful economic development, a Libyan case study, Proceeding of the Arab Management Conference, University of Bradford Management Centre, Bradford, 6-8 July, pp.220-32
- Tata, J. Prasad, S. (1998) Cultural and structural constraints on total quality management implementation, Total Quality Management and Business Excellence, Vol. 9 No.8, pp.703-709.
- Tatikonda, L.V. and Tatikonda, R.J. (1996) Top ten reasons your TQM efforts is failing to improve profit, Production and Inventory Management Journal, third quarter, pp. 5-9.)
- Tayeb, M.H. (1996) The Management of a Multicultural Workforce, Wiley, Chichester,
- Taylor, S. J. and Bogdan, R. (1984) Introduction to qualitative research methods: The search for meanings. New York: John Wiley and Sons.
- Taylor W. (1995) Organisational differences in ISO 9000 implementation practice, Journal of Quality and Reliability Management, Vol.12, No.7, Pp.11-26.
- Tayyara G. Nasser A. and Ghadban G. (2000) The Quality and its role in economical development, Retrieved November 20; from the Internet, www.mafhoum.com/syr/articles.
- The green book, part two, the solution of the economic basis of the third universal theory, <http://www.greenbookstudies.com/en/greenbookpart2.html>, (Accessed 19 August 2007)
- Thiagarajan, T. Zairi, M. and Dale, B. (2001) A proposed model of TQM implementation based on an empirical study of Malaysian industry. International Journal of Quality and Reliability Management, Vol. 18, No. 3, pp. 39-51.

- Thomas, D.C. and Au, K. (2002) The effect of cultural differences on behavioral responses to low job satisfaction. *Journal of International Business Studies*, 32 (2): 309-321.
- Thompson, J. L. (2001) *Strategic management*. 4^{ed}. New York: Thompson Press.
- Tichey, N. (1983) *Managing Strategic Change*. New York: John Wiley and Sons.
- Torbica, Z.M. and Stroh, R.C. 2001, Customer Satisfaction in Home Building, *Journal of Construction Engineering and Management*, Vol.127, Issue 1, pp. 82-86.
- Triandis, H.C. (1994) *Culture and Social Behavior*. New York: McGraw-Hill.
- Triandis, H.C. (2002a) Motivation to work in cross-cultural perspective. In J.M. Brett and F. Drasgow (eds.) *The Psychology of Work: Theoretically Based Empirical Research* (pp. 100-117) Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Triandis, H.C. (1990). Cross-cultural studies of individualism and collectivism. In J. J. Berman (ed.) *Nebraska Symposium on Motivation*, vol. 37 (pp. 41-119) Lincoln: University of Nebraska Press.
- Triandis, H.C. (2002) Generic individualism and collectivism. *The Blackwell Handbook of Cross-Cultural Management* (pp.16-45) Oxford, U.K.: Blackwell Business.
- Trompenaars, F. (1993) *Riding the Waves of Culture*, The Economist Books, London.,
- Tsim, C.Y. Yeung, S.W.V. Leung, C.T.E. (2002) An adaptation to ISO 9001:2000 for certified organisations, *Managerial Auditing Journal*, Vol. 17 No.5, pp.246-47.
- Tyson, S. and York, A. (1996) *Human Resource Management* 3^{ed} .Oxford: Made Simple Books.
- UNDP (2007) United Nations Development Programmes. Human development index for 2007/8. Available at: www.eastwest.be/news.html (Accessed 5th April 2007)
- Van Maanen, J. (Ed.) (1983a) *Qualitative Methodology*, Sage, London.
- vertical dimensions of individualism and collectivism: A theoretical and

Vouzas, F. (1997) Middle management and quality improvement: Evidence from five countries. In Livian Yves-Frédéric and G. J. Burgoyne (Eds.) *Middle managers in Europe* (pp. 156-171) London, UK: Routledge.

Vouzas, F.K. Gotzamani, K.D. (2005) Best practices of selected Greek organizations on their road to business excellence, *The TQM Magazine*, Vol. 17 No.3, pp.257-63.

Waldman, D.A. and Yammarino, F.J. (1999) CEO charismatic leadership: levels-of-management and levels-ofanalysis effects, *Academy of Management Review*, 24(2) pp. 269–284.

Waldman, D.A. (1997) The contributions of total quality management to a theory of work performance. *Academy of Management Review*, 19(3) 511-520.

Walton, R.E. (1987) *Managing Conflict, Interpersonal Dialogue and Third-party Roles*, available at: www.worldbank.org.html (Accessed 9th April 2006)

Werther, W. B. and Davis, K. (1996) *Human Resources and Personal Management*. 5ed. USA: McGraw-Hill.

Wilcocks, L. and Harrow, J. (1992) *Rediscovering Public Services Management*, London: McGraw-Hill.

Wilkinson, A. Redman, T. and Snape, E. (1993) *Quality and the manager*. London: Institute of Management.

Wilkinson, A. (1994) Managing human resources for quality, in Dale, B. (Eds) *Managing Quality*, Prentice-Hall, Englewood Cliffs, NJ, pp.273-91

Wilson, D.D. Collier, D.A. (2000) An empirical investigation of the Malcolm Baldrige National Quality Award causal model, *Decision Sciences*, Vol. 31 No.2, pp.360-88.

Winch, G. Usmani, A. Edkins, A. (1998) Towards total project quality: a gap analysis approach, *Construction Management and Economics*, Vol. 16 pp.193-207.)

Withers B. and Ebrahimpour M. (2001) Impact of TQM registration on European firms: a case analysis, *Integrated Manufacturing Systems*, Vol.12, No.2, pp.139-151.

Wong, A. and Fung, P. (1999) Total quality management in the construction industry in Hong Kong: a supply chain management perspective, *Total Quality Management*, vol. 10, no .2, pp. 200-207.

Wright, P. Kroll, M.J. and Parnell, J. (1996) Strategic Management Concepts and Cases, 3ed. New Jersey: Printice Hall International.

The General People's Committee, Patron of PROJEX LIBYA.. Available at:
[Www.projectlibya.com/report](http://www.projectlibya.com/report). (Accessed 9th April 2006)

Yahya, S. and Goh, W. (2001) Implementation of an ISO 9000 quality system, International Journal of Quality and Reliability Management, 18, pp. 941–966.)

Yasamis, F. Arditi, D. and Mohammadi, J. (2002) Assessing contractor quality performance. Construction Management and Economics. 20, pp. 211-223.))

Yeh, Y.J. (2003) Implementing a sustainable TQM system: employee focus, The TQM Magazine, Vol. 15 No.4, pp.57-265.

Yin, R. (1994) Case Study Research. Design and Methods, 2nd ed., Sage, Thousand Oaks, CA,

Yin R. (2003) Case Study Research: Design and Methods, 3rd edition, Sage Publications, London, UK.

Young, N.J. and Von Seggern, M. (2002) General information seeking in changing times: a focus group study, Reference and User Services Quarterly, Vol. 41 No.2, pp.159-69.

Youngman, M. B. (1979) Analysing Social and Educational Research data, McGraw-Hill Book Company Ltd, London

Yukl, G. (2002) Leadership in organisations, 5 ed (Englewood Cliffs, NJ: Prentice Hall)

Yusof, A.A. and Ali, J. (2000) Managing culture in organisation, Malaysian Management Review, Vol. 35 No. 2, pp. 60-5.

Yusof, S.M. and Aspinwall, E.M. (2000) Critical success barriers in small and medium enterprises: survey results. Total Quality Management, 11(4/5 and 6) S448–S462.

Zairi, M. (1994) Measuring Performance for Business Results, Chapman and Hall, London.

Zairi, M. Letza, S.R. and Oakland, J.S. (1994) Does TQM impact on bottom-line results? TQM Magazine, Vol. 6, pp. 39-42.

Zairi M. (1996) Economic Development and Global Competitiveness: Why should Arab Managers take Notice of Total Quality Management?, The 4th Arab Management Conference, University of Bradford, Bradford-UK, July, Pp.407-423.

Zairi, M. (2005) Total Quality Management - Deming and Juran Gift to the World, Spire Publishing, Clitheroe, Lancs, UK.

Zairi, M. and M. Al Mashari (2005) Developing a sustainable culture of Innovation Management: A Prescriptive Approach, Knowledge and Process Management, Vol 12, Issue No 3, pp. 193 – 206.

Zairi, M. with Ginn, D. (2005) Best Practice QFD Application: An internal/external benchmarking approach Based on Ford Motors' Experience, International Journal of Quality and Reliability Management, Vol. 22, No 1, 2005, pp. 40-49.

Zangwill, W.I. (1994) Ten mistakes CEOs make about quality", Quality Progress, June, pp. 43-48.

Zeng, S.X. Tam, C.M. Wang, H.C. and Deng, Z.M. (2002) Quality certification scheme in the construction industry of China, Architectural Science Review, Vol. 45 No.2, pp.83-9.

Zickmund G. (2000) Business Research Methods, 6^{ed} edition, The Dryden Press, Harcourt College Publishers.

Appendices

Appendix I – Cover letter for survey

(English version)

Libyan Arab Jamahiriya, Great Socialist People's

Brotherhood to the company:

Peace is upon you,

I am currently studying for a PhD at the University of Plymouth in the United Kingdom. My research aims to investigate current knowledge of Total Quality Management (TQM) in the Libyan construction industry.

The study will also seek to assess the potential for wider application of TQM practices across the whole construction sector. In addition to the academic goal of this research will try to shed light on how well understood the concept of Total Quality Management model in Libya generally. Achieving the objectives of this research depends on the extent of your interest and your answer to the questions included in the questionnaire. I would seek to reassure you that your personal details will not be published but your responses will be incorporated into the final report for this research and may be included in any publications that may arise from the study.

Thank you for your co-operation

Researcher /

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(Arabic version)

الجمهورية العربية الليبية الشعبية الاشتراكية العظمى

إلى الاخوة بالشركة:-

السلام عليكم ،،

أقوم حالياً بإجراء دارسه لنيل الدكتوراه في مجال ادراة أعمال (إدارة الجودة الشاملة

في المملكة المتحدة.(Plymouth) بجامعة بلمثا TQM-

هذا البحث يهدف إلى دارسه مدى أمكانية تطبيق إدارة الجودة الشاملة في الشركات الانتشائية في الجماهيرية.

إضافة إلى الهدف الأكاديمي لهذا البحث فإن أهميته تعود إلى محاولة إلقاء الضوء على مفهوم إدارة الجودة الشاملة كمنهج حديث في علم الإدارة حيث لم يسبق بحثه في هذا المجال بليبيا.

هذا المنهج له مبادئ ومتطلبات لا بد من توفيرها عند الرغبة في تحسين وتطوير الأداء في المؤسسة بصفه مستمرة.

وقد ثبت نجاح هذا المنهج في كثير من الدول المتقدمة عند تطبيقه بشكله الصحيح.

وان تحقيق أهداف هذا البحث يعتمد على مدى اهتمامكم وتعاونكم بالإجابة على كافة أسئلة الاستبيان كما أن إجاباتكم ستستخدم لأغراض هذا البحث فقط.

شاكرأ لكم حسن تعاونكم وتفضلكم بالآ جابه.

الباحث/ خالد فرج الشريف

بجامعة بلمث

المملكة المتحدة

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Sherifk96@hotmail.com

- مسائل خاصة بالمشح الرئيسي الملحق

إدارة الجودة والإشاعات الإجمالية في ليبيا

هذا المشح الغرض منه جمع المعلومات حول معرفة وفهم إدارة الجودة الإجمالية وتقييم رأيكم حول أي عوائق تشعرون أنها قائمة تؤثر على تنفيذ أنظمة إدارة الجودة الإجمالية بشركتكم . وأكون في غاية الامتنان لكم لتكرمكم الإجابة على كافة الأسئلة بالكامل وبدقة بقر المستطاع .

خاله الشريف

طالب لنيل درجة الدكتوراه ، جامعة بليماوت ن المملكة المتحدة

معلومات سكانية

من القائمة الواردة أدناه ن يرجى اختيار عنوان واحد يمثل أفضل وصف لوظيفتكم في الشركة :

- كبير المدراء
- مدير وسط
- مدير خطوط أول
- مستخدم

معلومات عن الشركة

(داخل شركتكم TOM مجموعة الأسئلة هذه تطرح لمعرفة رأيكم حول عدد من المسائل ذات العلاقة بفهم (والممارسات ذات العلاقة بها .

يتم تقديم المشح في شكل قائمة بيانات يمكن إن توافقون عليهم أو تعترضون عليها . يرجى وضع علامة صح في الرقم الذي تعتقدون أنه يعكس رأيكم بصورة أفضل فيما يتعلق بالبيانات الواردة .

مدى درجات القياس :

5 =وافق بشدة

4 =وافق

3 = محايد

2 = لا اوافق

1 = لا اوافق بشدة

0 = غير مطبق

ملاحظة هامة : هذا المسح يخدم أغراض أكاديمية وان كافة المعلومات سوف يتم الاحتفاظ بها بسرية تامة .

(إدارة الجودة الإجمالية)TQM الجزء الأول – معرفة وفهم

TQM المعرفة والفهم لإدارة الجودة الإجمالية

TQM س1 : معظم المستخدمين في الشركة الليبية لهم معرفة تامة وفهم كامل لمفهوم

تم تنفيذها داخل مصالح الشركة الليبية TQM س2 : بعض من مفاهيم

مفهوم الزبون الداخلي والخارجي

س3 :المستخدمون من مختلف المستويات والمصالح الإدارية في الشركات الإنسانية الليبية مدركون لهذا الموقف .

س4: كل مستخدم في الشركات الإنسانية الليبية يعامل زملائه باعتبارهم زبائن .

(TW مفهوم فريق العمل)

س5 : اهمية مفهوم فريق العمل حسب المستوى الوظيفي .

TQM س6 : تشخيص شركة الإنشاءات الليبية فراغات بين حاجة التدريب وإدارة الجودة الإجمالية

- س7 : الدورة التدريبية لهيئة مستخدمي شركة الإنشاءات الليبية للعمل في فريق .
- س8: في شركة الإنشاءات الليبية توجد العديد من الفرق القطاعية التي تساهم في حل مشاكل الجودة
- س9: الإدارة العليا في شركة الإنشاءات الليبية تنظر إلى روح الفريق بمثابة إحدى العوامل الهامة لتحسين وتشجيع المستخدمين للعمل في فريق .

QTP الجودة من خلال الأشخاص

- حسب المستوى الوظيفي QTP س10 : أهمية مفهوم الجودة من خلال الأشخاص
- TQM س11: يشجع المستخدمين داخل شركة الإنشاءات الليبية على لعب دور هام في تحسين

MC(التزام الإدارة)

- س12: أهمية مفهوم الالتزام الإداري حسب المستوى الوظيفي .
- س23: المدراء الكبار في شركة الإنشاءات الليبية يستمعون لأصوات المستخدمين عند طرحهم لأمور تتعلق بتحسين الجودة ويظهرون التزاما مرئيا واضحا ويتخذون إجراءات طرق تحسين عملية .

TQM الجزء الثاني – عوائق تنفيذ

س	العائق	أوافق بشدة	أوافق	لا أوافق	لا أوافق بشدة	غير مطبق
العوائق الداخلية والخارجية						
1	في TQM هنالك نقص في فهم أغراض مجال الصناعة المهنية					
2	في TQM هنالك نقص في فهم منافع					

					الصناعة المهنية	
					3 من خلال TQM لا يوجد إدراك لـ المستخدمين في الصناعة المهنية	
					4 هنالك نقص في التزام الإدارة العليا بـ داخل الصناعة TQM	
					5 يقدم الدعم المالي الحكومي لمساعدة الشركة TQM في تنفيذ نظام	
					6 تؤثر العوامل الاجتماعية السياسية الخارجية TQM على إستراتيجية الشركة ازاء	
					7 لا توجد ضغوطات خارجية لتساهم في إرغام الشركة على تنفيذ التحسينات في أنظمة إدارة الجودة	
العوامل غير الفنية						
					8 الاتصالات فيما بين المصالح الإدارية غير فعالة	
					9 هنالك احساس عام بهبوط المعنويات في الشركة	
					10 انعدام التعاون المقطعي بين المصالح الإدارية	
					11 انعدام ارتباط المستخدم بالقرارات الإدارية	
					12 أغراض الجودة مشجعة بجلاء للمستخدمين	
					13 انعدام أي نظم تغذية رجوعية خلفية للزبون	
					14 يوجد انعدام التعاون من الزبائن	
					15 حمل عملي إضافي لتأسيس TQM تعتبر	

					إدارة الجودة	
					تزود الإدارة العليا الدعم المالي للمستخدمين لتطبيق وتحسين برامج الجودة	16
					تغذية الزبون الخلفية في الشركة عادة لا يجري العمل بإجرائها	17
العوائق الفنية						
					لا يتم تحقيق مستهدفات الشركة التدريبية عامة	18
					هنالك انعدام في المعلومات حول إدارة الجودة بالشركة TQM	19
					تتم دراسة تحليلي المشاكل الإدارية لمعرفة السبب الكامن وراء هذه المشاكل	20
					صعبة جدا في تعلمها TQM أنظمة وتنفيذها	21
					لم يتم تطوير الهيكل التنظيمي السليم حتى TQM يتسنى تنفيذ	22

س	العائق	أوافق بشدة	أوافق	لا أوافق	لا أوافق بشدة	غير مطبق
23	التقنية غير الكافية وضعف ممارسات إدارة الجودة موجودة بالشركة					
24	هنالك نقص في الاستشاريين المحليين داخل TQM المؤهلين بصفة سليمة في القطاع					
25	هنالك انعدام في الاتصالات بدأ من مستوى					

					الإدارة العليا وحتى المستخدمين	
					26	تتعدم القيادة الموجهة في مسائل الجودة في الصناعة المهنية
					27	الإدارة العليا لديها الرغبة والإرادة في تبني TQM مفهوم
					28	هنالك نقص في الخبرة في إدارة الجودة الإجمالية في الصناعة المهنية عامة
					29	TQM هنالك رؤيا إستراتيجية حول مستقبل بالشركة
					30	الصناعة المهنية لا تعطي الوقت الكافي عامة TQM
					31	تقوم الشركة بتدريب مستخدميها دون أي غرض واضح جليا
					32	ينظر المستخدمون إلى نظام إدارة الجودة الكلية باعتباره أداة لتوجيه النقد لأداء المستخدم
عوامل ثقافية تنظيمية						
					33	ترقية المدراء في المصالح الإدارية داخل الشركة غير مبنية على المؤهلات
					34	يقاوم المستخدمون التغييرات بشأن أنظمة إدارة الجودة في الشركة
					35	تسود ثقافة بيروقراطية في المنظمة
					36	العديد من الناس يتم تعيينهم بشغل وظائف من دون حيازتهم للمهارات بفعالية

37	يجد المستخدمون صعوبات جمة في فهم TQM مستلزمات				
38	الإدارات المختلفة لديها أنظمة تشغيل مختلفة				
39	التاريخ العائلي للأفراد له تأثير رئيسي في الإدارة العملية التشغيلية				
40	هنالك نسبة تسبب حالية (غياب) وسط المستخدمين				
41	لا يعمل المستخدمون لتحسين مستقبل الشركة				
42	تفتقر الشركة إلى أنظمة الحوافز والمكافأة (والثواب / الجزاء)				
43	يحب المستخدمون إتباع التوجيهات فقط وليس العمل على خلق وابتكار مقترحات في أعمالهم				
44	انعدام الدعم المالي من الحكومة لمساعدة عن طريق TQM الشركة في تنفيذ نظم تحفيز كافة أفراد هيئة المستخدمين للعمل المنظور				
س	العائق	أوافق بشدة	أوافق	لا أوافق	لا أوافق بشدة
45	هنالك نقص في الدراسات من جانب المصالح الحكومية لمساعدة إرشاد الشركة TQM في تطوير نظم				

نهاية المسح

نشكركم جزيلًا على تكبدكم مشاق المشاركة

لمزيد من الاستفسارات حول هذا المسح يرجى عدم التردد في الاتصال بما يلي :

خالد ف. الشريف

جامعة بليموث

P14 8AX

المملكة المتحدة

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الهاتف بليبيا : 0021892 3214645

sherfk96@hotmail.com بريد الكتروني :

الجزء الثالث

الأسئلة المستعملة بشأن مقابلات المتابعة

- س1 : كيف يتم تنفيذ مفاهيمكم ومبادئكم الخاصة بإدارة الجودة الكلية / الإجمالية في الشركات الإنشائية TQM س2 : ما هي المعوقات الرئيسية حيال الزيادة المعرفية والفهم بشأن TQM. الليلية ؟
- س3 : ما هي المعوقات الرئيسية التي تواجه الشركات الراعية في بدء تنفيذ ممارسات وأعراف TQM ؟
- س4 : من خلال تجاربكم في هذا المجال ، ما هي المعوقات الرئيسية التي تواجه تنفيذ هذه النظم في الصناعة المهنية الإنشائية بليبيا عامة ؟
- س5 : حسب رأيكم ن ما هي العوامل التي تساعد في تنفيذ TQM ؟
- س6 : ما هي كيفية تخصيص مسئوليات الجودة الكلية وتنفيذها داخل شركتكم ؟
- س7 : ما هي الضغوط داخل وخارج شركتكم التي تؤثر على إدارتكم للجودة ؟
- س8 : هل توجد هنالك أي عوامل سياسية أو اقتصادية أو ثقافية أو اجتماعية أو تقنية تؤثر في تفكيركم حول إدارة الجودة الكلية ؟

س9 : كيف يتم تقسيم صلاحيات اتخاذ القرارات حول أمور الجودة داخل شركتكم ؟

س10: هل تقوم أي من المصالح الحكومية الليبية بدفع الشركة قدما لتنفيذ

TQM؟

س11 : ما هو رأيكم عامة حول إدارة الجودة

TQM؟

س12: هل تدركون أي عوائق أخرى تواجه الشركة بحيث تساهم في إعاقة قدراتها لتبني

TQM ؟

Appendix II – Questions for main survey

TQM and construction management in Libya

This survey is designed to collect information about your knowledge and understanding of Total Quality Management (TQM) and to assess your opinion on any barriers that you feel may exist which would affect the implementation TQM systems within your organisation. I would be very grateful if you could answer all questions as completely and accurately as possible.

Khaled Sherif

PhD Student, University of Plymouth, UK

Demographic information

From the list below, please select one title that best describes your position in your organisation:

Top Manager

Middle Manager

First- line Manager

Employee

Organisation Information

This set of questions asks about your opinion on a range of issues related to the understanding of TQM within your organisation and practices related to TQM.

The survey is presented in the form of a list of statements that you may agree or disagree with. Please tick in the number that you consider best reflects your opinion in relation the statements made.

Scale Range:

- 5 = Strongly Agree
- 4 = Agree
- 3 = Neutral
- 2 = Disagree
- 1 = Strongly Disagree
- 0 = Not Applicable

Important note: This survey is for academic purposes and all information will be kept confidential

PART 1 – Knowledge and understanding of TQM

Knowledge and understanding of TQM

- Q1 Most employees in Libyan Company have a full knowledge and understanding of the concept of TQM.
- Q2 Some TQM Concepts have been implemented within Libyan's Company departments .

The Internal and External Customer concept

- Q3 Employees at different Levels and departments of Libyan construction are aware of such an attitude.
- Q4 Each employee in Libyan Construction companies treat colleagues as Customers.

The Team Work Concept (TW)

- Q5 The significance of the teamwork concept according to Occupation Levels

- Q6 Libyan Construction Company identifies gaps between its Training and TQM need.
- Q7 The Training session of Libyan construction company personnel to work in Team
- Q8 In Libyan Construction Company there is many cross-functional teams solving quality problem.
- Q9 Top management of Libyan Construction Company regards team spirit an important factors for improving and encourages the employees to work in team

Quality through People (QTP)

- Q10 The significance of Quality through People concept according to Occupation Levels
- Q11 Within Libyan Construction Company the employees are encouraged to play an important role in improving the TQM.

Management commitment (MC)

- Q12 The Significance of Management Commitment concept According to Occupation Levels
- Q13 The senior managers of Libyan Construction Company listen to the voice of employees when they raise matters related to quality improvement and show visible commitment and take ownership of improvement processes.

PART 2: Barriers to the implementation of TQM

Q	Barrier	Strongly agree	Agree	Disagree	Strongly disagree	NA
External and Internal Barriers						
1	There is a lack of understanding of the purposes of TQM in the industry					
2	There is a lack of understanding the benefits of TQM in the industry					
3	There is no awareness of TQM through employees in the industry					
4	There is a lack of top management commitment to TQM generally within the industry					

Q	Barrier	Strongly agree	Agree	Disagree	Strongly disagree	NA
5	There is no government financial support to help the organisation to implement a TQM system					
6	External socio-political factors affect the organisation's TQM strategy					
7	There are no outside pressures to make the organisation implement improvements in its quality management systems					
Non-technical barriers						
8	Communication between departments is ineffective					
9	There is a general sense of low morale in the organisation					

Q	Barrier	Strongly agree	Agree	Disagree	Strongly disagree	NA
10	There is no cross-functional cooperation between departments					
11	There is no employee involvement in management decisions					
12	Quality objectives are clearly identified to employees.					
13	There is no customer feedback system					
14	There is a lack of cooperation from customers					
15	TQM is an additional workload to the established quality management.					

Q	Barrier	Strongly agree	Agree	Disagree	Strongly disagree	NA
16	Top management provides financial support to the employees to apply and improve quality programs					
17	Customer feedback in the organisation is not generally acted upon					
Technical barriers						
18	Training targets in the organisation are generally not achieved					
19	There is a lack of information on TQM in the organisation					
20	Management problems are analysed to know the reason behind these problems					

Q	Barrier	Strongly agree	Agree	Disagree	Strongly disagree	NA
21	TQM systems are too difficult to learn and implement					
22	No proper organisational structure has been developed to implement TQM					
23	Insufficient technology and poor quality management practices currently exist in the organisation					
24	There is a lack of local consultants properly qualified in TQM within the sector					
25	There is a lack communication from senior management levels to employees.					
26	There is no leadership on quality issues in the industry					

Q	Barrier	Strongly agree	Agree	Disagree	Strongly disagree	NA
27	Top management is willing to adopt the TQM concept					
28	There is a lack of expertise in Total quality management in the industry generally					
29	There is a strategic vision for the future about TQM in the organisation					
30	The industry does not generally allow time for TQM					
31	The organisation trains its employees without a clear purpose.					
32	The employees see the total quality management system as a tool to criticise employee performance.					

Q	Barrier	Strongly agree	Agree	Disagree	Strongly disagree	NA
Organisational culture barriers						
33	The promotion of managers in departments within the company is not based on qualifications.					
34	Employees resist changes to quality management systems in the organisation					
35	A bureaucratic culture is prevalent in the organisation					
36	Many people are appointed to positions without having the skills to undertake the role effectively					
37	Employees have difficulty understanding TQM requirements					

Q	Barrier	Strongly agree	Agree	Disagree	Strongly disagree	NA
38	Different departments have different operating systems					
39	The family history of individuals has a major influence on operational management					
40	There is high employee absenteeism					
41	Employees are not working to improve the future of the organisation					
42	The organisation lacks a motivation and reward system					
43	Employees want to follow instructions rather than to create proposals in their jobs					

Q	Barrier	Strongly agree	Agree	Disagree	Strongly disagree	NA
44	No government financial support to help the organisation to implement a TQM system by motivation all the staff to work recognisable.					
45	There is a shortage of studies from governmental department to help guide the organisation in developing a TQM system					

END OF THE SURVEY

Thank you for your participation

If you have any questions regarding this survey please contact:

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PART 3: Questions used for follow-up interviews

- Q1 How are the concepts and principles of TQM implemented?
- Q2 What are the main barriers to increasing the knowledge and understanding of TQM in Libyan construction companies?
- Q3 What are the main barriers facing organisations that wish to start implementing TQM practices?
- Q4 From your experience in this field, what are the main barriers facing the implementation of this system in the Libyan construction industry generally?
- Q5 In your opinion, what factors are helpful for the implementation of TQM?
- Q6 How are the responsibilities for quality allocated and undertaken your organisation?
- Q7 What pressures, inside or outside your organisation affect how you manage quality?
- Q8 Are there any specific politics, economic, socio-cultural or technological factors that influence you thinking about TQM?
- Q9 How is authority for decisions on quality matters distributed within your organisation?
- Q10 Do any Libyan government departments push the company to implement TQM?
- Q11 What do you think about TQM generally?
- Q12 Are you aware of any other barriers facing the company that would hinder its ability to adopt TQM?

Appendix III – Main survey results

Example of main survey results

Company A: Top Managers

a1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	16.7	16.7	16.7
	Agree	4	66.7	66.7	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	16.7	16.7	16.7
	Agree	4	66.7	66.7	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	16.7	16.7	16.7
	Agree	3	50.0	50.0	66.7
	Strongly Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	16.7	16.7	16.7
	Agree	2	33.3	33.3	50.0
	Strongly Agree	3	50.0	50.0	100.0
	Total	6	100.0	100.0	

a5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	50.0	50.0	50.0
	Disagree	2	33.3	33.3	83.3
	Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	16.7	16.7	16.7
	Agree	3	50.0	50.0	66.7
	Strongly Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	33.3	33.3	33.3
	Disagree	2	33.3	33.3	66.7
	Agree	1	16.7	16.7	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	4	66.7	66.7	66.7
	Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	33.3	33.3	33.3
	Disagree	4	66.7	66.7	100.0
	Total	6	100.0	100.0	

a10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	16.7	16.7	16.7
	Disagree	4	66.7	66.7	83.3
	Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	16.7	16.7	16.7
	Disagree	4	66.7	66.7	83.3
	Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	33.3	33.3	33.3
	Agree	3	50.0	50.0	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	4	66.7	66.7	66.7
	Strongly Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	16.7	16.7	16.7
	Disagree	3	50.0	50.0	66.7
	Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a15

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	16.7	16.7	16.7
	Disagree	4	66.7	66.7	83.3
	Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a16

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	33.3	33.3	33.3
	Agree	2	33.3	33.3	66.7
	Strongly Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a17

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	16.7	16.7	16.7
	Agree	3	50.0	50.0	66.7
	Strongly Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a18

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	16.7	16.7	16.7
	Disagree	2	33.3	33.3	50.0
	Agree	2	33.3	33.3	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a19

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	4	66.7	66.7	66.7
	Strongly Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a20

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	16.7	16.7	16.7
	Disagree	4	66.7	66.7	83.3
	Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a21

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	16.7	16.7	16.7
	Agree	3	50.0	50.0	66.7
	Strongly Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a22

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	33.3	33.3	33.3
	Disagree	3	50.0	50.0	83.3
	Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a23

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	16.7	16.7	16.7
	Disagree	2	33.3	33.3	50.0
	Agree	2	33.3	33.3	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a24

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	4	66.7	66.7	66.7
	Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a25

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	16.7	16.7	16.7
	Disagree	2	33.3	33.3	50.0
	Not Applicable	1	16.7	16.7	66.7
	Agree	1	16.7	16.7	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a26

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	33.3	33.3	33.3
	Disagree	4	66.7	66.7	100.0
	Total	6	100.0	100.0	

a27

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	33.3	33.3	33.3
	Agree	2	33.3	33.3	66.7
	Strongly Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a28

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	16.7	16.7	16.7
	Disagree	2	33.3	33.3	50.0
	Agree	2	33.3	33.3	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a29

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	3	50.0	50.0	50.0
	Agree	2	33.3	33.3	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a30

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	4	66.7	66.7	66.7
	Strongly Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a31

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	33.3	33.3	33.3
	Agree	3	50.0	50.0	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a32

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	33.3	33.3	33.3
	Agree	3	50.0	50.0	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a33

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	3	50.0	50.0	50.0
	Agree	2	33.3	33.3	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a34

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	16.7	16.7	16.7
	Disagree	3	50.0	50.0	66.7
	Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a35

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	16.7	16.7	16.7
	Agree	4	66.7	66.7	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a36

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	33.3	33.3	33.3
	Disagree	2	33.3	33.3	66.7
	Not Applicable	1	16.7	16.7	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a37

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	16.7	16.7	16.7
	Agree	2	33.3	33.3	50.0
	Strongly Agree	3	50.0	50.0	100.0
	Total	6	100.0	100.0	

a38

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	16.7	16.7	16.7
	Agree	3	50.0	50.0	66.7
	Strongly Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a39

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	33.3	33.3	33.3
	Disagree	2	33.3	33.3	66.7
	Agree	1	16.7	16.7	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a40

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	16.7	16.7	16.7
	Agree	3	50.0	50.0	66.7
	Strongly Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a41

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	33.3	33.3	33.3
	Agree	3	50.0	50.0	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a42

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	3	50.0	50.0	50.0
	Strongly Agree	3	50.0	50.0	100.0
	Total	6	100.0	100.0	

a43

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	4	66.7	66.7	66.7
	Strongly Agree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

a44

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	33.3	33.3	33.3
	Agree	3	50.0	50.0	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

a45

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	4	66.7	66.7	66.7
	Agree	1	16.7	16.7	83.3
	Strongly Agree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

Appendix IV – Statistical analysis of main survey data

Example of main survey results Company A Top managers

Q	N	Minimum	Maximum	Mean	Std. Deviation
a1	6	2	5	3.83	.983
a2	6	2	5	3.83	.983
a3	6	2	5	4.00	1.095
a4	6	2	5	4.17	1.169
a5	6	1	4	1.83	1.169
a6	6	2	5	4.00	1.095
a7	6	1	5	2.50	1.643
a8	6	2	4	2.67	1.033
a9	6	1	2	1.67	.516
a10	6	1	4	2.17	.983
a11	6	1	4	2.17	.983
a12	6	2	5	3.50	1.225
a13	6	4	5	4.33	.516
a14	6	1	4	2.50	1.225
a15	6	1	4	2.17	.983
a16	6	2	5	3.67	1.366
a17	6	2	5	4.00	1.095
a18	6	1	5	3.00	1.549
a19	6	4	5	4.33	.516
a20	6	1	4	2.17	.983
a21	6	1	5	3.83	1.472
a22	6	1	4	2.00	1.095

a23	6	1	5	3.00	1.549
a24	6	2	4	2.67	1.033
a25	6	1	5	2.83	1.472
a26	6	1	2	1.67	.516
a27	6	2	5	3.67	1.366
a28	6	1	5	3.00	1.549
a29	6	2	5	3.17	1.329
a30	6	4	5	4.33	.516
a31	6	2	5	3.50	1.225
a32	6	2	5	3.50	1.225
a33	6	2	5	3.17	1.329
a34	6	1	4	2.50	1.225
a35	6	2	5	3.83	.983
a36	6	1	5	2.33	1.506
a37	6	2	5	4.17	1.169
a38	6	2	5	4.00	1.095
a39	6	1	5	2.50	1.643
a40	6	2	5	4.00	1.095
a41	6	2	5	3.50	1.225
a42	6	4	5	4.50	.548
a43	6	4	5	4.33	.516
a44	6	2	5	3.50	1.225
a45	6	2	5	2.83	1.329